11989-13

DEPARTMENT OF THE ARMY
HEADQUARTERS, MILITARY TRAFFIC MANAGEMENT COMMAND
5611 COLUMBIA PIKE
FALLS CHURCH, VA 22041-5050

REPLY TO ATTENTION OF
Safety Branch

RSPA-97-3170-1

97 OCT 10

DEPARTMENT OF TRANSPORTATION
97 OCT 12 PM 4:28
DOCKET SECTION

Chief, Exemptions Branch
ATTN: Mrs. Suzanne Hedgepeth
Office of Hazardous Materials Transportation
U.S. Department of Transportation
400 Seventh Street, SW.
Washington, DC 20590

Dear Madam,

In accordance with the provisions of Title 49, Code of Federal Regulations (CFR), Section 107.113, we are hereby applying for **an emergency exemption** on behalf of the Department of Defense (DOD). DOD requests an exemption from these specific regulations:

1) CFR 49, Sec 172.504 General Placarding Requirements
2) CFR 49, Sec 176.83(9b) General Segregation Table
3) CFR 49, Sec 176.83 (9d) Segregation in Transport Units
4) CFR 49, Sec 176.83 (9f) Segregation of Containers on Board Container Vessels

This emergency exemption to CFR 49 item segregation distances for Class 1.1 and 2.2 items is required for national security reasons in support of the United States Air Force's Afloat prepositioned Fleet (APF) storage of containerized munitions aboard Military Sealift Command (MSC) leased container vessels.

Approval is required for Inside Opening (ISO) container stuffing to begin NLT 27 Oct 97, with vessel loading starting 15 Nov 97. If this exemption is not approved, fully 75 percent of our precision guided munitions will not be available for afloat prepositioning; creating a serious negative impact on the United State's ability to rapidly respond to contingencies around the world.

Segregation of the Hazard Class 2.2 items into separate containers is not possible for two reasons:

1) This would counter the "Complete Round" concept used in developing the Air Force's containerization strategy. This strategy provides the warfighter with all components necessary to build a specific weapon within one ISO container, facilitating the Air Force's ability to quickly launch precision guided munition air sorties from remote locations.

2) The vessel to be delivered in November does not have the space to allow for the addition of containers needed to carry out a segregation.

Mode of Transportation: Items will be placed in 20 foot ISO containers and stowed on MSC leased container vessels for the purpose of stockpiling assets for war time or contingency use as directed by the National Command Authorities. Containers covered will be placed on container vessels of the Air Force's Afloat Prepositioned Fleet (APF).

Exemption is necessary to allow the Air Force to excuse its "Complete Round' strategy, which allows the warfighter to build complete weapons from a single ISO container load. This strategy will utilize the ISO container load drawings provided by the United States Army Defense Ammunition Center and School (USADAC) for the loading and bracing of 2,000 pound bomb units. The specific USADAC drawing is 19-48-7113-SP15M5, "Loading and Bracing with Wooden Dunnage in Side Opening ISO Containers of Guided bombs (GBU) model 10, model 15, model 24, and model 27, within a GBU model specific ISO container. The drawing on page twelve of the file is the specific layout used for the GBU-24 and GBU-27. This exemption deals specifically with the GBU-24 using the MK-84 or BLU-109 2,000 pound bomb (Atch 2) and the GBU-27 using the MK-84 2,000 pound bomb (Atch 3). These models of GBU require the inclusion of guidance control units (WGU-39) containing compressed helium (Haz Class 2.2) with the 2,000 pound bombs (Haz Class 1.1) inside the inside the ISO container. Per CFR 49, Table 176.83(b), these classes fall into the "separated from" segregation category. With this exemption, the ISO container markings would be the same as for an assembled GBU-24 or GBU-27; in both cases, this is "Explosive 1.1."

No historical data exists on the prior use of this initial use of the Complete Round ISO container for these weapons. However, these weapons are stored as complete rounds IAW Air Force Manual 91-201, Explosive Safety Standards, Para 2.29 (Atch 9), when needed. In these cases, the storage location or magazine is placarded with the 1.1 symbol in order to identify the greatest hazard. The ISO containers covered by this exemption will contain all the components of the weapon, within individual shipping containers, and be stored in sealed ISO containers, within ship holds whose environments are controlled with air conditioning and dehumidification systems. It is our contention that this method is at least as safe as magazine storage of the assembled round, perhaps more so as the components of the weapon do not actually touch, are held with in their individual storage containers, and are restrained by extensive wooden blocking and bracing.

The WGU-39 is contained in an approved and inspected CNU-371/E shipping and storage container (Atch 4). In the WGU-39 (Atch 5), 43 to 50 cubic inches of compressed helium is held within a high pressure gas bottle (part number 2853412-1) under 8,000 psi (Atch 6). The BLU-109 bombs are attached to CNU-416/E bomb pallets (Atch 7). The MK-84 bombs are attached to standard bomb pallets (Atch 8). All items will be placed in a CSC approved and inspected 20 foot, side opening ISO container for shipping and storage aboard the APF vessels.

Applicable Technical Orders: GBU-24: T.O. 11K20-2-7 (Covers both bomb types)
GBU-27: T.O. 11K25-2-7
WGU-39: T.O. 11K20-2-7

Exemption duration: This exemption is requested for a minimum of 5 years, which is the duration of a APF vessel contract. The actual duration of this exemption will vary in response to the fielding of additional ISO containers of these weapons types on follow-on APF vessels.

Hazardous Materials for Exemption:
GBU- 24 (BLU-109) ISO Container, 6 Rounds
Proper Shipping Name: Helium, Compressed
WGU-39, Compressed Helium, 43 to 50 cubic inches, (2.2), UN 1046
NSN: 1325-01-356-1432

Proper Shipping Name: Bombs
BLU-109, 2000 lb. Bomb (1.1D) UN 0034, N.E.W. 553 lbs.
NSN: 1325-01-221-5385
EX#-8901042

Proper Shipping Name: Fuzes, Detonating
FMU-143, Fuze (1.4D) UN 0410
N.E.W. 0.2721 lbs.
NSN: 1325-01-323-9171
EX#-8812119

GBU- 24 (MK-84) ISO Container, 12 Rounds
Proper Shipping Name: Helium, Compressed
WGU-39, Compressed Helium, 43 to 50 cubic inches, (2.2), UN 1046
NSN: 1325-01-356-1432

Proper Shipping Name: Bombs
MK-84, 2000 Bomb, (1.1D) UN 0034 N.E.W. 945 lbs.
NSN: 1325-01-033-9895
EX#-8803463

Proper Shipping Name: Fuzes, Detonating
FMU-139, Fuze (1.2D) UN 0409, N.E.W. 0.2778 lbs.
NSN: 1325-01-214-7311
EX#-8808613

GBU-27 (MK-84) ISO Container, 12 Rounds
Proper Shipping Name: Helium, Compressed
WGU-39, Compressed Helium, 43 to 50 cubic inches, (2.2), UN 1046
NSN: 1325-01-356-1432

Proper Shipping Name: Bombs
MK-84, 2000 lb. Bomb, (1.1D) UN 0034, N.E.W. 945 lbs
NSN: 1325-01-033-9895
EX#-8803463

Proper Shipping Name: Fuzes, Detonating
FMU-143, Fuze (1.4D) UN 0410
N.E.W. 0.2721 lbs.
NSN: 1325-01-323-9171
EX#-8812119

Packaging: **WGU-39 - CNU 371/E Shipping and Storage Container (Atch 4)**
BLU-109 - CNU-416/E Shipping and Storage Pallet (Atch 7)
MK-84, Standard Bomb Shipping and Storage Pallet (Atch 8)
FMU-139/143 Fuzes - Held within Barrier Bags and placed in 20mm Shipping and Storage Cans
Wooden Blocking and Bracing in accordance with applicable USADAC drawing (Atch 1)

Priority handling of this request is in the best interest of the national defense and security. It would be appreciated if this request for exemption be processed on a priority basis with a goal of October 21, 1997, for issuance of the subject exemption.

If you have any questions or need additional information, please contact Ms. Jameelah Shareef or Mr. Harris H. Yeager, Headquarters, Military Traffic Management Command; ATTN: MTOP-FPS; 5611 Columbia Pike; Falls Church, VA, 22041-5050, telephone (703) 681-6951.

Sincerely,

for James Boyd
David B. Terry
Assistant Deputy Chief of Staff
for Operations, Operations

Enclosures
CF: U.S. Coast Guard
File DOTE 97-1016

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS OGDEN AIR LOGISTICS CENTER (AFMC)
HILL AIR FORCE BASE, UTAH

14 Oct 97

MEMORANDUM FOR HQ MTMC/MTOP-OPS
ATTN: Mr. Yeager

FROM: OO-ALC/LIWOC
USAF AFLOAT PREPOSITIONED FLEET
HILL AFB, UT 84056-5820

SUBJECT: Request for Emergency Exemption to CFR 49 (Re: CFR 49, Sec 107.117)

1. This emergency exemption to CFR 49 item segregation distances for Class 1.1 and 2.2 items is required for national security reasons in support of the United States Air Force's Afloat Prepositioned Fleet (APF) storage of containerized munitions aboard Military Sealift Command (MSC) leased container vessels.

a. Approval is required for ISO container stuffing to begin NLT 27 Oct 97, with vessel loading starting 15 Nov 97. If this exemption is not approved, fully 75 percent of our precision guided munitions will not be available for afloat prepositioning; creating a serious negative impact on the United States' ability to rapidly respond to contingencies around the world.

b. Segregation of the Haz Class 2.2 items into separate containers is not possible for two reasons: 1) This would counter the "Complete Round" concept used in developing the Air Force's containerization strategy. This strategy provides the warfighter with all components necessary to build a specific weapon within one ISO container, facilitating the Air Force's ability to quickly launch precision guided munition air sorties from remote locations; 2) The vessel to be delivered in November does not have the space to allow for the addition of containers needed to carry out a segregation.

2. The following information is provided per guidance in CFR 49, Sec 107.105

a. Applicant: United States Air Force Afloat Prepositioned Fleet, Capt. Ernest S. Drake (Applicant Agent)

Home Station Address	Current Deployed Location Address
OO-ALC/LIWOC	1303rd Major Port Command
6043 Elm Lane	Military Ocean Terminal, Sunny Point
Hill AFB, UT 84056-5820	Southport, N.C. 28461-5000
Comm: 801-488-9411	Comm: 910-457-8761
DSN: 777-9411	DSN: 488-8761

b. Specific Regulation from which Applicant is seeking Relief:

i) CFR 49, Sec 172.504 General Placarding Requirements

ii) CFR 49, Sec 176.83 (9b) General Segregation Table

iii) CFR 49, Sec 176.83 (9d) Segregation in Transport Units

iv) CFR 49, Sec 176.83 (9f) Segregation of Containers on Board Container Vessels

c. Mode of Transportation: Items will be placed in 20 foot ISO containers and stored on MSC leased container vessels for the purpose of stockpiling assets for war time or contingency use as directed by the National Command Authorities. Containers covered by this exemption will be placed on container vessels of the Air Force's Afloat Prepositioned Fleet (APF).

d. Exemption Description:

i) Exemption is necessary to allow the Air Force to execute its "Complete Round" strategy, which allows the warfighter to build complete weapons from a single ISO container load. This strategy will utilize the ISO container load drawings provided by the United States Army Defense Ammunition Center and School (USADAC) for the loading and bracing of 2,000 pound guided bomb units. The specific USADAC drawing is 19-48-7113-SP15M5, "Loading and Bracing with Wooden Dunnage in Side Opening ISO Containers of Guided Bomb Units, Complete Round (2,000 Pounds)" (Atch 1). This drawing describes procedures used to place all components needed for the construction of guided bombs (GBU) model 10, model 15, model 24, and model 27, within a GBU model specific ISO container. The drawing on page twelve of the file is the specific layout used for the GBU-24 and GBU-27. This exemption deals specifically with the GBU-24 using the MK-84 or BLU-109 2,000 pound bomb (Atch 2) and the GBU-27 using the MK-84 2,000 pound bomb (Atch 3). These models of GBU require the inclusion of guidance control units (WGU-39) containing compressed helium (Haz Class 2.2) with the 2,000 pound bombs (Haz Class 1.1) inside the ISO container. Per CFR 49, Table 176.83(b), these classes fall into the "separated from" segregation category. With this exemption, the ISO container markings would be the same as for an assembled GBU-24 or GBU-27; in both cases, this is "Explosive 1.1."

ii) Because this is the initial use of the Complete Round ISO container concept for these weapons, no historical data exists on prior use. However, these weapons are stored as complete rounds IAW Air Force Manual 91-201, Explosive Safety Standards, Para 2.29 (Atch 9), when needed. In these cases, the storage location or magazine is placarded with the Explosive 1.1 symbol in order to identify the greatest hazard. The ISO containers covered by this exemption will contain all the components of the weapon, within individual shipping containers, and be stored in sealed ISO containers, within ship holds whose environments are controlled with air conditioning and dehumidification systems. It is our contention that this method is at least as safe as magazine storage of the assembled round, perhaps more so as the components of the weapon do not actually touch, are held with in their individual storage containers, and are restrained by extensive wooden blocking and bracing.

iii) The WGU-39 is contained in an approved and inspected CNU-371/E shipping and storage container (Atch 4). In the WGU-39 (Atch 5), 43 to 50 cubic inches of compressed helium is held within a high pressure gas bottle (part number 2853412-1) under 8,000 psi (Atch 6). The BLU-109 bombs are attached to CNU-416/E bomb pallets (Atch 7). The MK-84 bombs are attached to standard bomb pallets (Atch 8). All items will be placed in a CSC approved and inspected 20 foot, side opening ISO container for shipment and storage aboard the APF vessels.

iv) Applicable Technical Orders: GBU-24: T.O. 11K20-2-7 (Covers both bomb types)
GBU-27: T.O. 11K25-2-7
WGU-39: T.O. 11K20-2-7

e. Exemption Duration: This exemption is requested for a minimum of 5 years, which is the duration of a APF vessel contract. The actual duration of this exemption will vary in response to the fielding of additional ISO containers of these weapon types on follow-on APF vessels.

f. Hazardous Materials for Exemption: <u>GBU- 24 (BLU-109) ISO Container, 6 Rounds</u>
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NSN: 1325-01-356-1432
BLU-109, 2000 lb. Bomb, (1.1D) UNO 0034, N.E.W. 553 lbs.
NSN: 1325-01-221-5385 EX# Ex-8901042
FMU-143, Fuze, (1.4D) UNO 0410, N.E.W. 0.2721 lbs.
NSN: 1325-01-323-9171 EX# Ex-8812119

GBU-24 (MK-84) ISO Container, 12 Rounds
WGU-39, Compressed Helium, 43 to 50 cubic inches, (2.2) UNO 1046
NSN: 1325-01-356-1432
MK-84, 2000 lb. Bomb, (1.1D) UNO 0034, N.E.W. 945 lbs.
NSN: 1325-01-033-9895 EX# Ex-8803463
FMU-139, Fuze, (1.2D) UNO 0409, N.E.W. 0.2778 lbs.
NSN: 1325-01-214-7311 EX# Ex-8808613

GBU-27 (MK-84) ISO Container, 12 Rounds
WGU-39, Compressed Helium, 43 to 50 cubic inches, (2.2) UNO 1046
NSN: 1325-01-356-1432
MK-84, 2000 lb. Bomb, (1.1D) UNO 0034, N.E.W. 945 lbs.
NSN: 1325-01-033-9895 EX# Ex-8803463
FMU-143, Fuze, (1.4D) UNO 0410, N.E.W. 0.2721 lbs.
NSN: 1325-01-323-9171 EX# Ex-8812119

g. Packaging: WGU-39 - CNU 371/E Shipping and Storage Container (Atch 4)
BLU-109 - CNU-416/E Shipping and Storage Pallet (Atch 7)
MK-84 - Standard Bomb Shipping and Storage Pallet (Atch 8)
FMU-139/143 Fuzes - Held within Barrier Bags and placed in 20MM Shipping and Storage Cans
Wooden Blocking and Bracing in accordance with applicable USADAC drawing (Atch 1)

ERNEST S. DRAKE, Capt, USAF
Program Manager

8 Attachments
1. USADAC Drawing 19-48-7113-SP15M5
2. GBU-24 Configuration Drawing
3. GBU-27 Configuration Drawing
4. CNU-371/E Shipping and Storage Container
5. WGU-39 Configuration Drawing
6. WGU-39 High Pressure Gas Bottle Specifications
7. CNU-416/E Bomb Shipping and Storage Pallet
8. MK-84 Shipping and Storage Pallet
9. AFMAN 91-201, para 2.29

cc: OO-ALC/LIWO
WP-ALC/LOP
1303rd MPC/QASAS

(Semi-Armored)

APPROVED BY
BUREAU OF EXPLOSIVES
D. M. Hardy
DATE 2/22/95

LOADING AND BRACING● WITH WOODEN DUNNAGE IN SIDE OPENING ISO CONTAINERS OF GUIDED BOMB UNITS, COMPLETE ROUND (2,000 POUND)⌖

⌖ THIS DRAWING INCLUDES PROCEDURES FOR GBU-10, GBU-15, GBU-24, AND GBU-27 BOMB CONFIGURATIONS.

● LOADING AND BRACING SPECIFICATIONS SET FORTH WITHIN THIS DRAWING ARE APPLICABLE TO LOADS THAT ARE TO BE SHIPPED BY TRAILER/CONTAINER-ON-FLATCAR (T/COFC) RAIL CARRIER SERVICE. THESE SPECIFICATIONS MAY ALSO BE USED FOR LOADS THAT ARE TO BE MOVED BY MOTOR OR WATER CARRIERS.

U.S. ARMY MATERIEL COMMAND DRAWING

APPROVED, U.S. ARMY ARMAMENT, MUNITIONS AND CHEMICAL COMMAND
Timothy R. Foss

APPROVED BY ORDER OF COMMANDING GENERAL, U.S. ARMY MATERIEL COMMAND
William J Ernst
U.S. ARMY DEFENSE AMMUNITION CENTER AND SCHOOL

DRAFTSMAN	TECHNICIAN	ENGINEER
	R. HAYNES	

VALIDATION ENGINEERING DIVISION	TRANSPORTATION ENGINEERING DIVISION	LOGISTICS ENGINEERING OFFICE
J.W. Frericks		W.J. Ernst

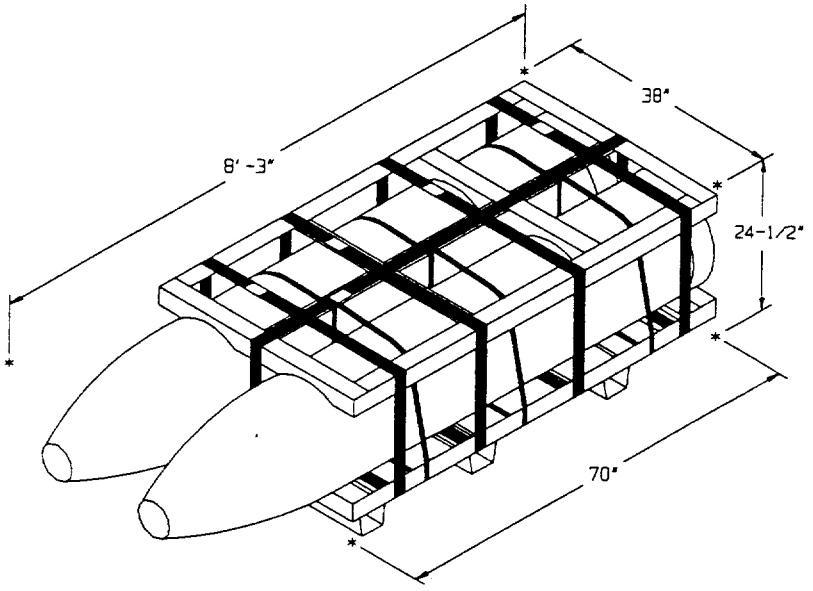
MARCH 1995

CLASS	DIVISION	DRAWING	FILE
19	48	7113	SP15M5

DO NOT SCALE

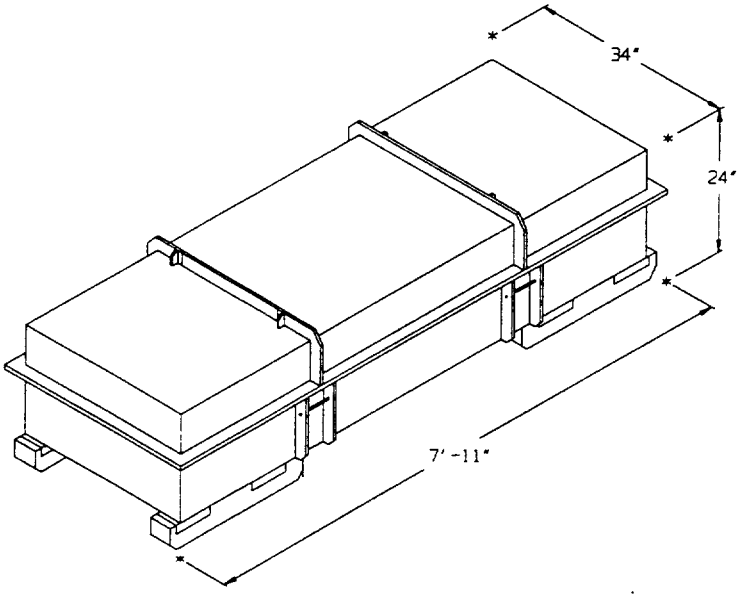
PROJECT SP 161-88

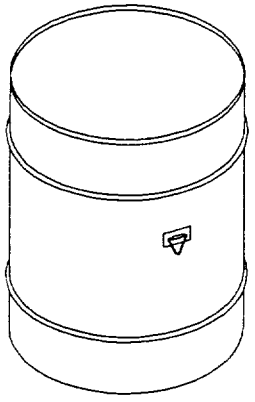
Sheet 1



BLU-109 BOMB PALLET UNIT

BOMB - - - - 2 EACH @ 1,930 LBS (APPROX)
CUBE - - - - - - - - 55.5 CU FT (APPROX)
GROSS WEIGHT - - - - - 4,133 LBS (APPROX)



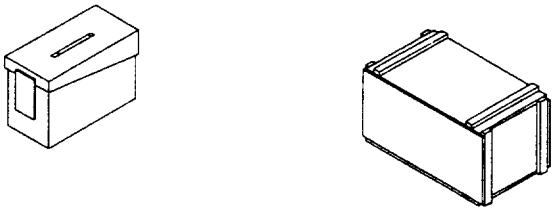


AIRFOIL GROUP, MXU-651

33-1/8" DIA BY 41-1/2" HIGH
CUBE - - - - - - 20.7 CU FT (APPROX)
GROSS WEIGHT - - 288 LBS (APPROX)

GUIDANCE SECTION, MAU-169

CNU-203/E CONTAINER
GROSS WEIGHT - - 672 LBS (APPROX)
CUBE - - - - - - - 44.9 CU FT (APPROX)



TYPICAL COMPONENT BOXES

VARIOUS SIZES AND WEIGHTS.

PROJECT SP 161-88

(KEY NUMBERS CONTINUED)

⑪ DECKING, PLYWOOD, 1/2" THICK (4 REQD). SEE THE DETAIL ON PAGE 9 AND SPECIAL NOTE 5 AT THE RIGHT.

⑫ CENTER GATE (2 REQD). SEE THE "CENTER GATE D" DETAIL ON PAGE 10. POSITION BETWEEN LONGITUDINALLY ADJACENT METAL DRUMS AS SHOWN.

⑬ HOLD DOWN BLOCK, 2" X 4" BY LENGTH TO SUIT (4 REQD). NAIL TO THE CENTER GATE, PIECE MARKED ⑫ , W/2-10d NAILS AT EACH JOINT.

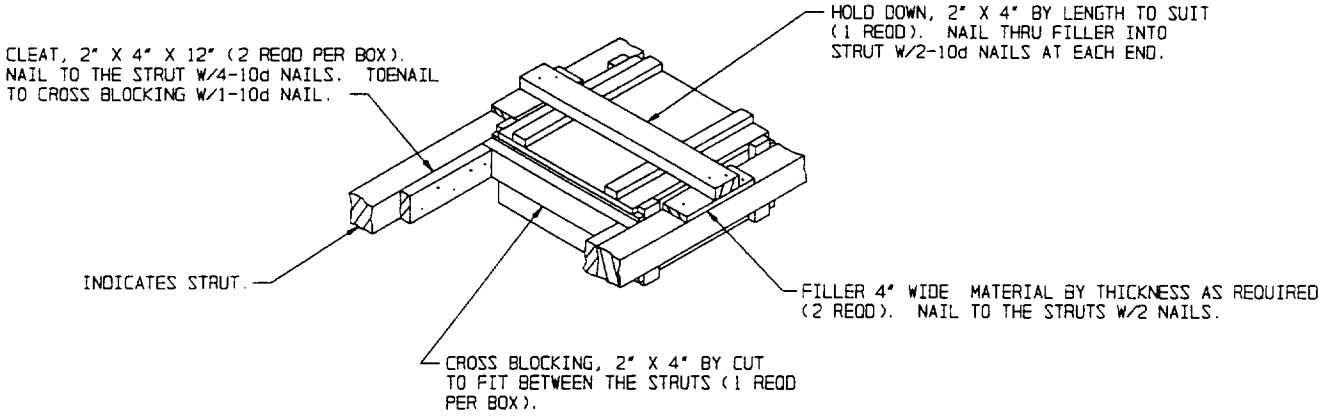
⑭ STRAP, 1-1/4" X .035" OR .031" BY LENGTH TO SUIT STEEL STRAPPING (12 REQD). INSTALL SO AS TO ENCIRCLE THE DRUMS AND THE DECK, PIECE MARKED ⑪ , AND /OR THE SECOND LAYER OF UNITS AS SHOWN.

⑮ SEAL FOR 1-1/4" STRAPPING (12 REQD, 1 PER STRAP). CRIMP EACH SEAL WITH TWO PAIR OF NOTCHES. SEE GENERAL NOTE "N" ON PAGE 2.

⑯ ANTI-CHAFING MATERIAL (AS REQD). POSITION UNDER ALL STEEL STRAPPING AT POINTS OF CONTACT WITH THE LADING.

SPECIAL NOTES:

1. THE LOAD AS SHOWN ON PAGE 4 DEPICTS A 10 COMPLETE ROUND LOAD OF 2,000 POUND GBU-10 BOMBS, INCLUDING 5 PALLETS OF BOMBS, 3 CNU-203/E CONTAINERS WITH MAU-169 FINS, 10 DRUMS WITH MXU-651 FINS, AND 8 BOXES CONTAINING FMU-143 FUZES.
2. WHEN INSTALLING THE DUNNAGE THAT APPLIES TO THE MISCELLANEOUS BOXES, ADJUSTMENTS TO THE QUANTITY AND SIZE OF MATERIAL MAY BE ADJUSTED AS NECESSARY.
3. MISCELLANEOUS BOXES MAY ALSO BE PLACED IN OTHER VOID AREAS WITHIN THE LOAD, SUCH AS BETWEEN LATERALLY ADJACENT LOAD UNITS.
4. IT IS RECOMMENDED THAT THE FIFTH PALLET UNIT OF BOMBS BE PLACED IN THE SECOND LAYER, BACK CORNER TO THE RIGHT WHEN VIEWING THE LOAD FROM THE DOOR OPENING SIDE.
5. THE PLYWOOD DECKING, SHOWN AS PIECE MARKED ⑪ , AND SHOWN IN DETAIL ON PAGE 9, MAY BE ADJUSTED IN SIZE AS NECESSARY.
6. FILL MATERIAL THE THICKNESS OF THE TOP FLANGES, WILL BE PLACED ON TOP OF THE CNU-203 CONTAINERS TO PROVIDE A MORE SOLID SURFACE FOR THE DECK TO LAY UPON. SEE THE "DECK" DETAILS ON PAGE 9.



SECUREMENT OF MISCELLANEOUS BOXES

MISCELLANEOUS BOXES MAY ALSO BE PLACED IN THE VOID AREA BETWEEN THE LOAD BEARING PIECES OF THE CRIB FILL ASSEMBLIES. ADJUSTMENTS TO THE ABOVE DETAIL MAY BE MADE SO AS TO PROVIDE FOR SIMILAR SECUREMENT TO THE CRIB FILL ASSEMBLIES.

BILL OF MATERIAL		
LUMBER	LINEAR FEET	BOARD FEET
1" X 4"	58	19
2" x 2"	15	5
2" X 4"	218	145
2" X 6"	267	267
4" X 4"	20	27
NAILS	NO. REQD	POUNDS
6d (2")	588	3-1/2
10d (3")	400	6-1/4
16d (3-1/2")	64	1-1/2
STEEL STRAPPING, 1-1/4" - - 160' REQD - - -		23 LBS
SEAL FOR 1-1/4" STRAPPING - - 12 REQD - - -		1/2 LB
PLYWOOD, 3/8" - - - - 300 SQ FT REQD - - -		309 LBS
PLYWOOD, 1/2" - - - - 222 SQ FT REQD - - -		305 LBS
PLYWOOD, 3/4" - - - - - 58 SQ FT REQD - - -		120 LBS
ANTI-CHAFING MATERIAL - - - AS REQD - - - - -		NIL

GBU-10 (BLU-109)		
TYPICAL ITEMS AS DEPICTED ON PAGE 4		
DODIC	NOMENCLATURE	QUANTITY
F140	BLU-109 BOMB PALLETS	5
E069	MAU-169 FIN	3
F761	MXU-651 AIRFOIL	10
BY04	FMU-143 FUZE	8

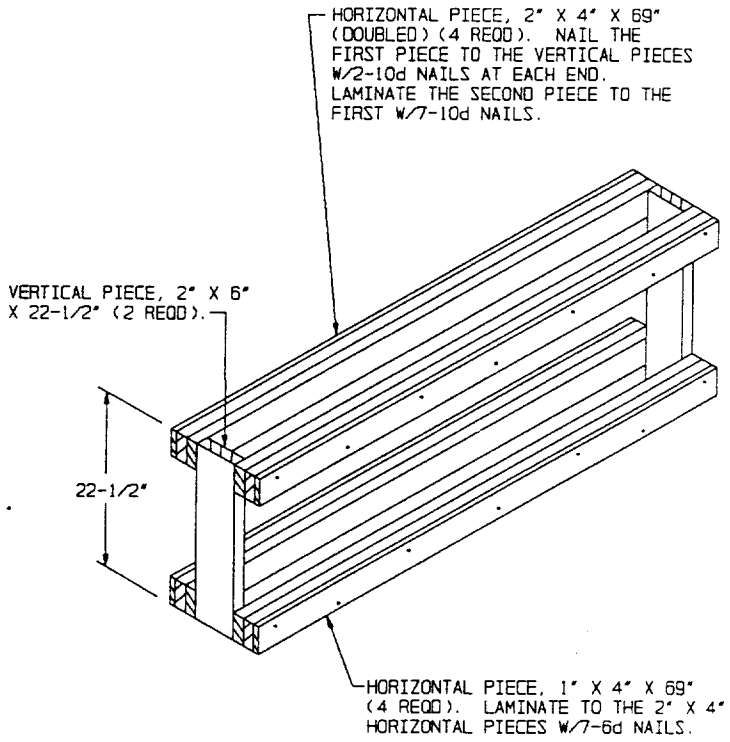
OK To D...

LOAD AS SHOWN

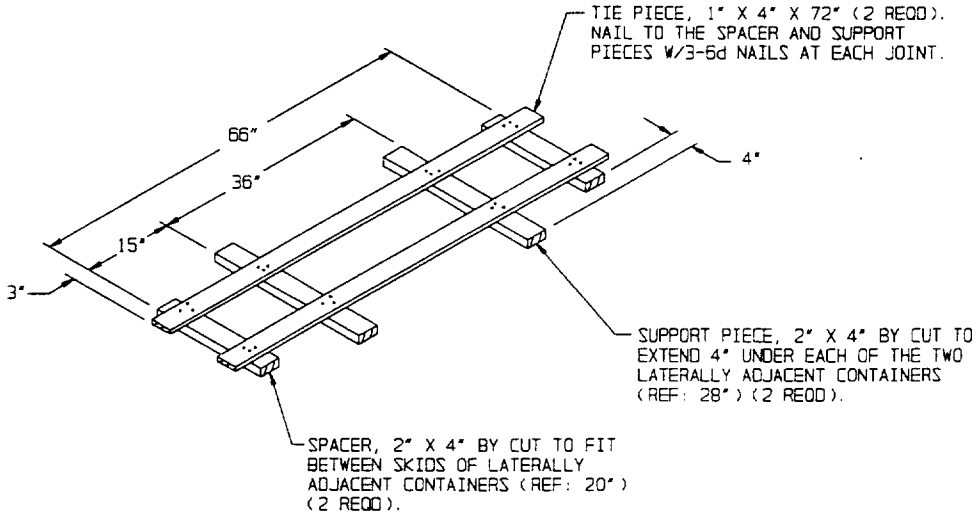
ITEM	QUANTITY	WEIGHT (APPROX)
BOMB PALLET UNIT	5	20,665 LBS
MAU-169 FIN	3	2,016 LBS
MXU-651 AIRFOIL	10	2,880 LBS
MISCELLANEOUS BOXES - AS REQD		400 LBS
DUNNAGE		1,695 LBS
CONTAINER		6,050 LBS
TOTAL WEIGHT		33,708 LBS (APPROX)

10 COMPLETE ROUND LOAD

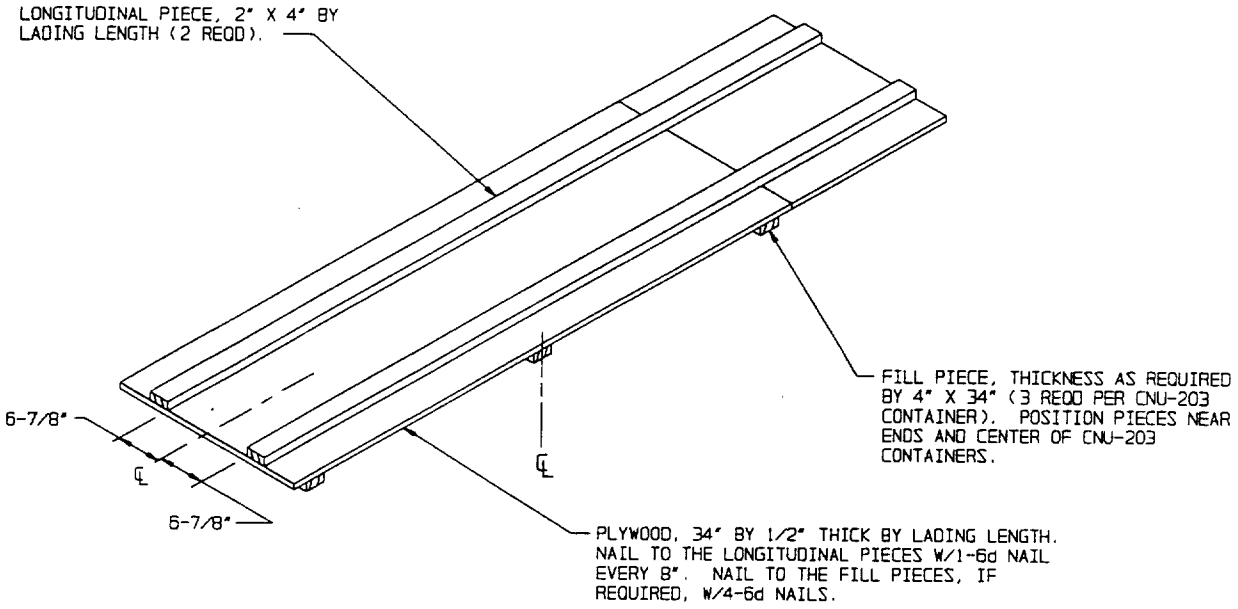
PROJECT SP 161-88



CRIB FILL A

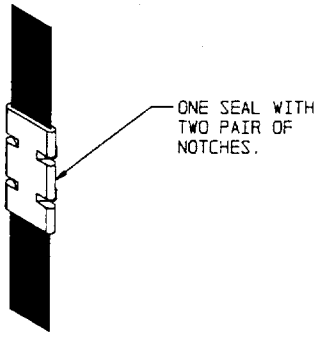


ANTI-SWAY BRACE



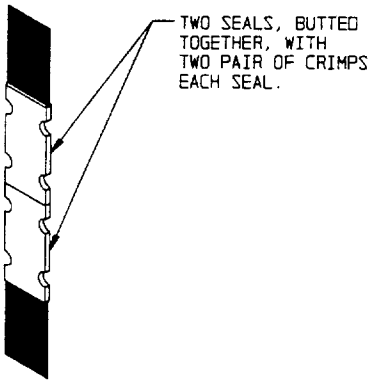
DECKING ASSEMBLY A

THE ABOVE ASSEMBLY MAY BE ADJUSTED IN SIZE AS NECESSARY ACCORDING TO THE NUMBER OF DRUMS TO BE SHIPPED OR TO BE THE SAME WIDTH OF THE CONTAINER OR PALLET UNIT ON WHICH IT IS PLACED.



STRAP JOINT A

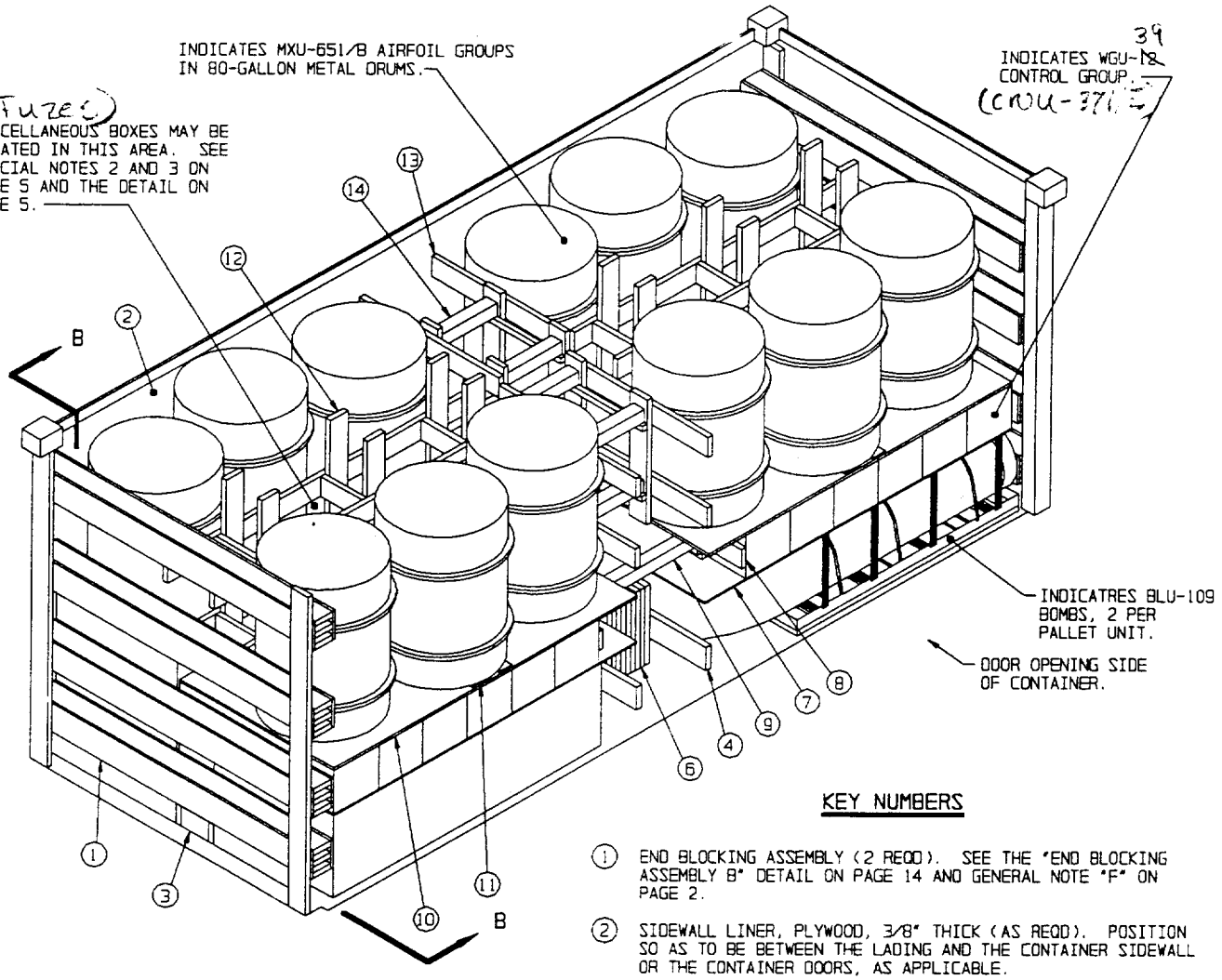
METHOD OF SECURING A STRAP JOINT WHEN USING A NOTCH-TYPE SEALER.



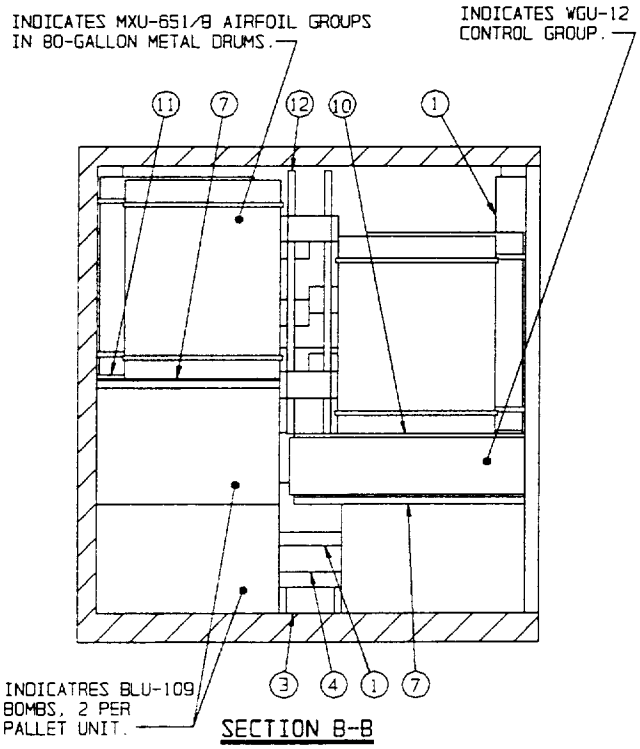
STRAP JOINT B

METHOD OF SECURING A STRAP JOINT WHEN USING A CRIMP-TYPE SEALER.

END-OVER-END LAP JOINT DETAILS



ISOMETRIC VIEW



SECTION B-B

KEY NUMBERS

(1) END BLOCKING ASSEMBLY (2 REQD). SEE THE "END BLOCKING ASSEMBLY B" DETAIL ON PAGE 14 AND GENERAL NOTE "F" ON PAGE 2.

(2) SIDEWALL LINER, PLYWOOD, 3/8" THICK (AS REQD). POSITION SO AS TO BE BETWEEN THE LADING AND THE CONTAINER SIDEWALL OR THE CONTAINER DOORS, AS APPLICABLE.

(3) CRIB FILL (2 REQD). SEE THE "CRIB FILL C" DETAIL ON PAGE 17. POSITION BETWEEN THE BOMB PALLET UNITS AS SHOWN IN THE SECTION B-B VIEW.

(4) CENTER GATE (2 REQD). SEE THE "CENTER GATE E" DETAIL ON PAGE 15. POSITION BETWEEN THE ONE HIGH STACK OF BOMBS.

(5) CENTER GATE (2 REQD) (NOT SHOWN). SEE THE "CENTER GATE F" DETAIL ON PAGE 15. POSITION BETWEEN THE LONGITUDINALLY ADJACENT TWO HIGH STACKS OF BOMBS.

(6) SOLID FILL, 6" WIDE MATERIAL BY LENGTH TO SUIT BY THICKNESS AS REQUIRED SO AS TO PROVIDE FOR A TIGHT LOAD. LAMINATE AND/OR TOENAIL TOGETHER AND TO CENTER GATES W/APPROPRIATE LENGTH NAILS. SEE GENERAL NOTE "D" ON PAGE 2.

(7) DECKING (4 REQD, 2 AT 38" WIDE AND 2 AT 48" WIDE). SEE THE "DECKING ASSEMBLY B" DETAIL ON PAGE 17.

(8) CENTER GATE (2 REQD). SEE THE "CENTER GATE G" DETAIL ON PAGE 16. POSITION SO TO BE BETWEEN LONGITUDINALLY ADJACENT CNU-317/E CONTAINERS.

(9) STRUT, 4" X 4" BY LENGTH TO SUIT (REF: 41") (2 REQD). POSITION BETWEEN THE CENTER GATES, PIECES MARKED (6), AND TOENAIL TO THE CENTER GATES W/2-16d NAILS AT EACH END.

(10) DECKING, PLYWOOD, 1/2" THICK BY 48" BY 8'-0" (2 REQD). POSITION ON TOP OF THE CNU-317/E CONTAINERS.

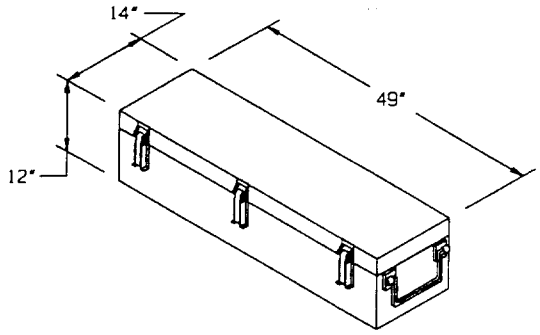
(11) RISER (4 REQD). SEE THE "RISER A" DETAIL ON PAGE 13.

(12) CRIB FILL (2 REQD). SEE THE "CRIB FILL ASSEMBLY C" DETAIL ON PAGE 10. POSITION SO AS TO BE BETWEEN THE DRUMS OF FINS. SEE SPECIAL NOTE 5 ON PAGE 13.

(13) CENTER GATE (4 REQD). SEE THE "CENTER GATE H" DETAIL ON PAGE 16.

(14) STRUT, 4" X 4" BY LENGTH TO SUIT (REF: 12") (8 REQD). POSITION BETWEEN THE CENTER GATES, PIECES MARKED (13), AND TOENAIL TO THE CENTER GATES W/2-16d NAILS AT EACH END.

12 COMPLETE ROUND LOAD

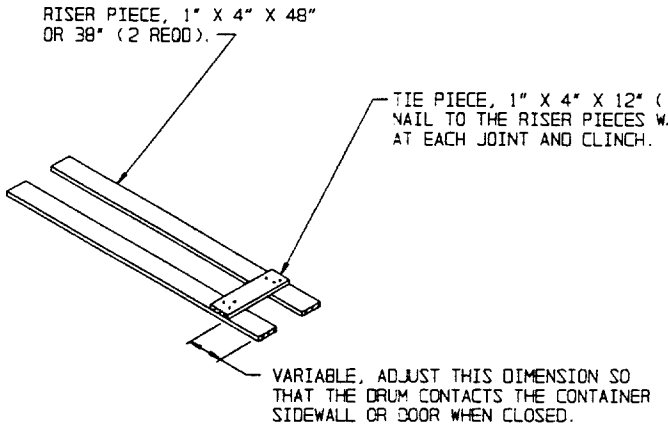


CNU-317/E CONTAINER

GROSS WEIGHT - - 100 LBS (APPROX)

SPECIAL NOTES:

1. THE LOAD AS SHOWN ON PAGE 12 DEPICTS A COMPLETE ROUND LOAD OF 2,000 POUND, GBU-10 BOMBS, INCLUDING 6 PALLETS OF BOMBS, 12 DRUMS OF MXU-651/E FINS, 12 CNU-317/E CONTAINERS OF WGU-12 CONTROL GROUP, AND 3 BOXES OF FMU-139 FUZES.
2. THE RISER, SHOWN AS PIECE MARKED (1) , MAY BE FABRICATED TO FIT THE SIDE OF THE LOAD ON WHICH IT IS PLACED.
3. REFER TO PAGE 5 FOR SECUREMENT OF MISCELLANEOUS BOXES.



RISER A

RISER PIECES FOR THIS ASSEMBLY HAVE BEEN SHOWN AS EITHER 48" OR 38" IN LENGTH. THE RISERS WITH THE 48" LENGTH WILL BE USED ON THE SIDE OF THE LOAD CONTAINING THE CNU-317/E CONTAINERS. THE RISERS USED ON THE OPPOSITE SIDE SHALL BE 38" LONG. SEE SPECIAL NOTE 2 ABOVE.

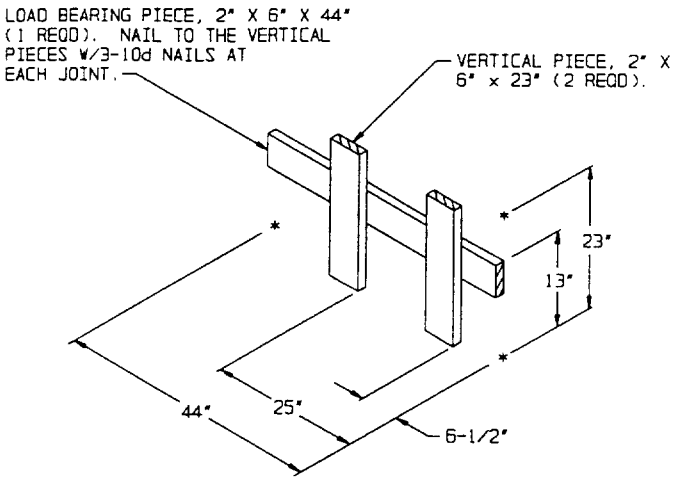
GBU-10 (MK 84)		
TYPICAL ITEMS AS DEPICTED ON PAGE 12		
DODIC	NOMENCLATURE	QUANTITY
F275	MK-84 BOMB PALLET	6
E069	MAU-169 FIN, CNU-317/E	12
F761	MXU-651 AIRFOIL	12
G119	FMU-139 FUZE	3

BILL OF MATERIAL		
LUMBER	LINEAR FEET	BOARD FEET
1" X 4"	33	11
2" x 2"	21	7
2" X 6"	657	657
4" X 4"	15	20
NAILS	NO. REQD	POUNDS
6d (2")	432	2-1/2
10d (3")	436	6-3/4
16d (3-1/2")	40	1
PLYWOOD, 3/8" - - - -	300 SQ FT REQD - - -	309 LBS
PLYWOOD, 1/2" - - - -	179 SQ FT REQD - - -	246 LBS
PLYWOOD, 3/4" - - - - -	39 SQ FT REQD - - -	79 LBS

LOAD AS SHOWN

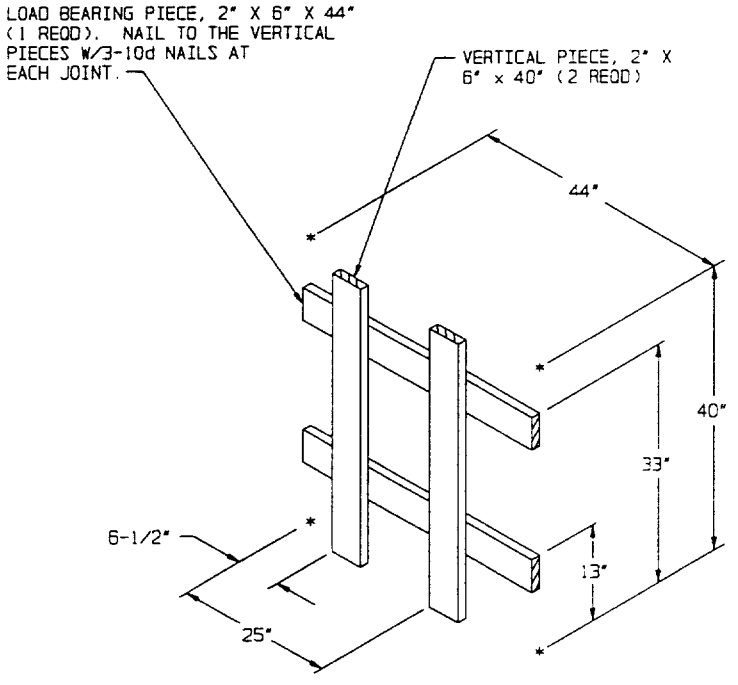
ITEM	QUANTITY	WEIGHT (APPROX)
BOMB PALLET UNIT - - -	6 - - - - - -	24,798 LBS
MAU-651/E FIN - - - - -	12 - - - - - -	3,480 LBS
WGU-12 CONTROL GROUP -	12 - - - - - -	1,200 LBS
MISCELLANEOUS BOXES - - - - - - - - - -		150 LBS
DUNNAGE - - - - - - - - - - - - - - - -		2,034 LBS
CONTAINER - - - - - - - - - - - - - - -		6,050 LBS
TOTAL WEIGHT - - - - - - - -		37,562 LBS (APPROX)

12 COMPLETE ROUND LOAD



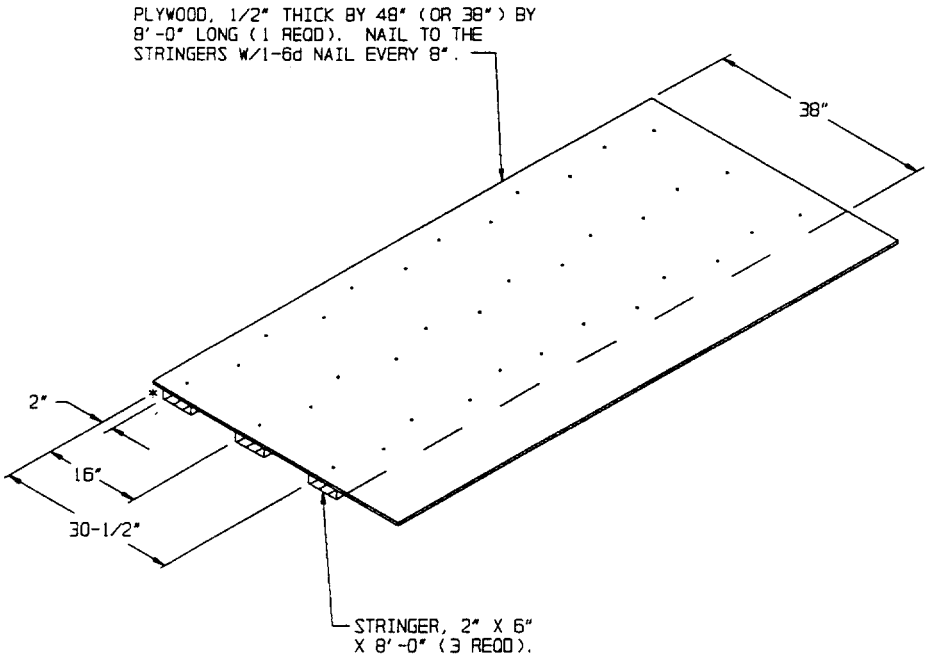
CENTER GATE E

A RIGHT HAND GATE IS SHOWN. THE LOAD AS DEPICTED ON PAGE 12 REQUIRES ONE (1) RIGHT HAND AND ONE (1) LEFT HAND GATE. NOTE THAT THE VERTICAL PIECES MUST BE IN ALIGNMENT WITH THE NOSE ENDS OF THE BOMBS.



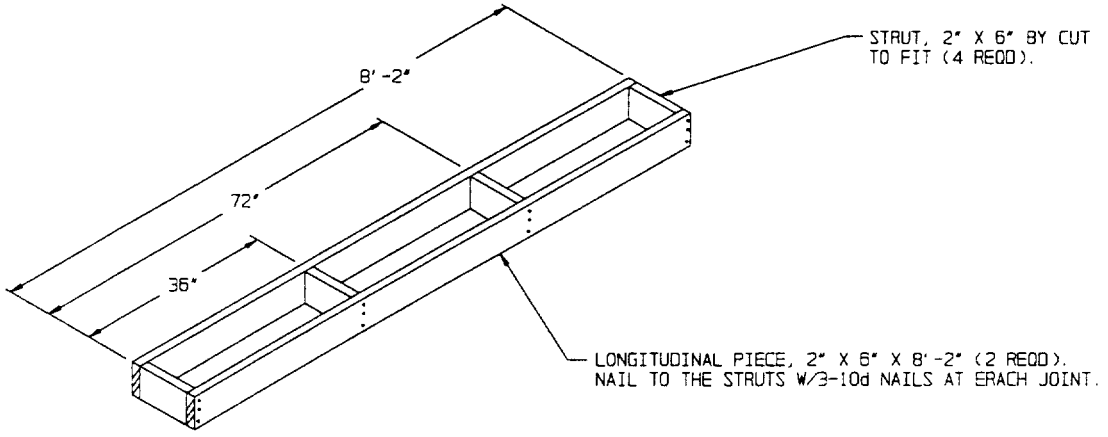
CENTER GATE F

A RIGHT HAND GATE IS SHOWN. THE LOAD AS DEPICTED ON PAGE 12 REQUIRES ONE (1) RIGHT HAND AND ONE (1) LEFT HAND GATE. NOTE THAT THE VERTICAL PIECES MUST BE IN ALIGNMENT WITH THE NOSE ENDS OF THE BOMBS.



DECKING ASSEMBLY B

THE DECKING ASSEMBLY SHOWN ABOVE MAY BE USED ON EITHER SIDE OF THE CONTAINER. THE DECKING ASSEMBLY POSITIONED UNDER THE GUIDANCE SECTION CONTAINERS MAY BE CONSTRUCTED FROM 48" WIDE MATERIAL, WHEREAS THE DECKING ASSEMBLIES ON THE OPPOSITE SIDE OF THE CONTAINERS SHALL BE 38" WIDE.



CRIB FILL C

(KEY NUMBERS CONTINUED)

⑬ SUPPORT PIECE, 2" X 6" BY LENGTH TO SUIT (REF: 60") (1 REQD).

⑭ BACK-UP CLEAT, 2" X 6" X 30" (1 REQD). NAIL TO THE SUPPORT PIECE, PIECE MARKED ⑬, W/8-10d NAILS.

⑮ DIAGONAL, 4" X 4" X 44-1/2" (1 REQD). SEE THE DETAIL BELOW FOR BEVEL CUTS REQUIRED. TOENAIL TO CENTER GATE "L" AND TO THE SUPPORT PIECE, PIECES MARKED ⑫ AND ⑬, W/2-16d NAILS AT EACH END.

⑯ TOP CLEAT, 2" X 6" X 12" (2 REQD). NAIL TO A VERTICAL PIECE W/5-10d NAILS.

⑰ SUPPORT PIECE, 2" X 6" BY LENGTH TO SUIT (REF: 26-1/2") (DOUBLED) (1 REQD). LAMINATE W/6-10d NAILS.

⑱ BUFFER PIECE, 2" X 6" X 12" (1 REQD). NAIL TO THE END OF THE SUPPORT PIECE, PIECE MARKED ⑰, W/2-10d NAILS. SEE SPECIAL NOTE 4 AT THE RIGHT.

⑲ DIAGONAL, 4" X 4" X 42-1/2" (1 REQD). SEE THE DETAIL BELOW FOR BEVEL CUTS REQUIRED. TOENAIL TO CENTER GATE "L" AND THE BUFFER PIECE, PIECES MARKED ⑫ AND ⑱, W/2-16d NAILS AT EACH END.

⑳ BUNDLING STRAP, 1-1/4" X .031" OR .035" X 15'-0" LONG STEEL STRAPPING (2 REQD). INSTALL SO AS TO ENCIRCLE THE THREE MXU-787 CONTAINERS AS SHOWN.

㉑ RESTRAINING STRAP, 1-1/4" X .031" OR .035" X 10'-0" LONG STEEL STRAPPING (3 REQD). INSTALL SO AS TO ENCIRCLE A MXU-787 CONTAINER AND THE SUPPORT PIECES AS SHOWN IN THE ISOMETRIC VIEW ON PAGE 18.

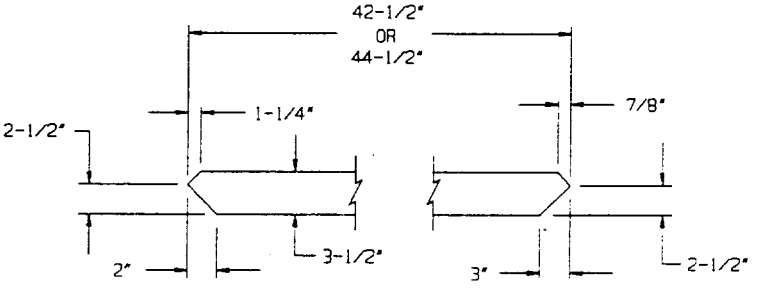
㉒ SEAL FOR 1-1/4" STRAPPING (5 REQD, 1 PER STRAP). CRIMP EACH SEAL WITH TWO PAIR OF NOTCHES. SEE GENERAL NOTE "N" ON PAGE 2.

㉓ ANTI-CHAFING MATERIAL (AS REQD). POSITION UNDER ALL STEEL STRAPPING AT POINTS OF CONTACT WITH THE LADING.

SPECIAL NOTES:

1. THE LOAD AS SHOWN ON PAGE 18 DEPICTS A COMPLETE ROUND LOAD OF GBU-15IR, BLU-109 BOMBS, INCLUDING 3 PALLETS OF BOMBS, 6 CONTAINERS OF MXU-787 FINS, 6 CONTAINERS (DRUMS) OF GUIDANCE ADAPTORS, 6 CONTAINERS (DRUMS) OF WCU-8 CONTROL SECTIONS, ONE CONTAINER OF ADK-723/B, 6 CONTAINERS OF RECEIVER TRANSMITTER GROUP, 1 CONTAINER OF WGU-10, AND 1 BOX OF FMU-143 FUZES.
2. REFER TO PAGE 5 FOR SECUREMENT OF MISCELLANEOUS BOXES.
3. THE PLYWOOD DECKING, SHOWN AS PIECE MARKED ⑦, MAY BE ADJUSTED IN SIZE AS NECESSARY.
4. A BUFFER PIECE, SHOWN AS PIECE MARKED ⑱, MUST BE POSITIONED SO AS TO BEAR AGAINST THE END OF A MXU-787 CONTAINER.

GBU-15 IR (BLU-109)		
TYPICAL ITEMS AS DEPICTED ON PAGE 18		
DODIC	NOMENCLATURE	QUANTITY
F140	BLU-109 BOMB PALLET	3
BY04	FUZE, FMU-143	3
FY20	GUIDE ADAPTER	6
E338	WCU-8A/B	6
FY46	MXU-787	6
FY22	REC TRANS GRP	6
E051	WGU-10	6
CY63	ADK-723/B	1



DIAGONAL BRACE
4" X 4" MATERIAL

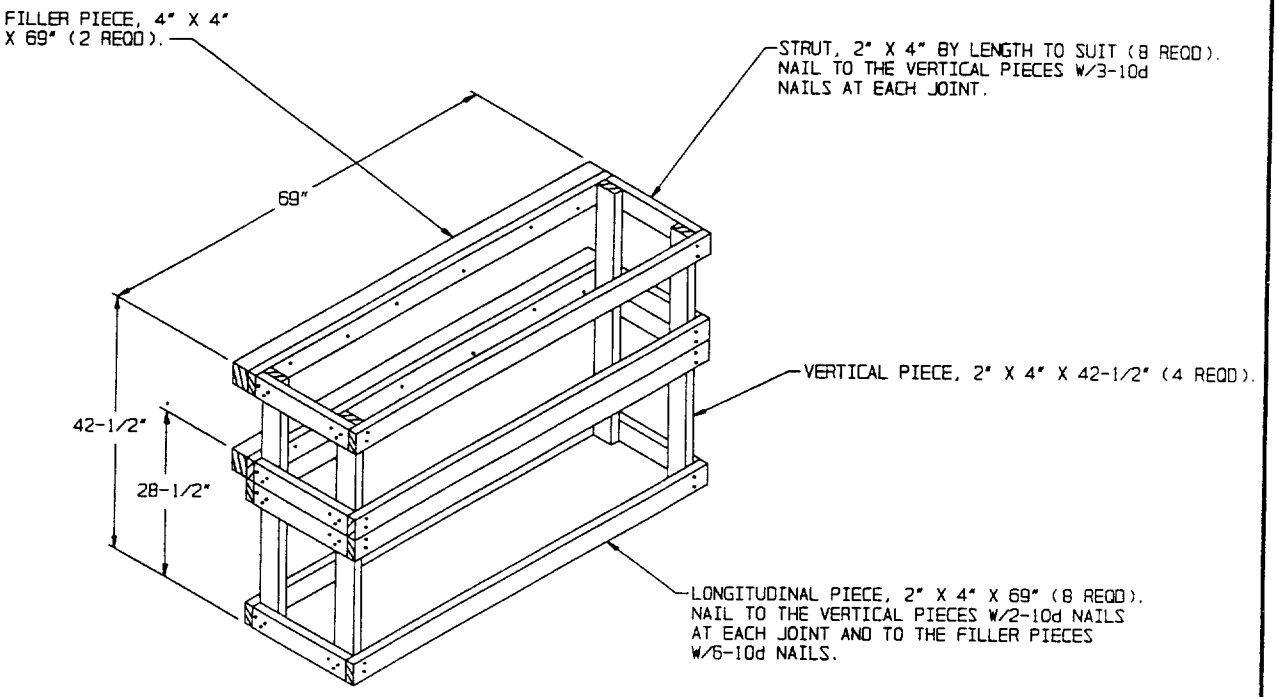
BILL OF MATERIAL		
LUMBER	LINEAR FEET	BOARD FEET
1" X 4"	34	11
2" X 2"	16	5
2" X 4"	165	110
2" X 6"	292	292
4" X 4"	50	67
NAILS	NO. REQD	POUNDS
6d (2")	420	2-1/2
10d (3")	462	7
16d (3-1/2")	40	1

STEEL STRAPPING, 1-1/4" - - 60' REQD - - -8-1/2 LBS
SEAL FOR 1-1/4" STRAPPING - - 5 REQD - - - - - NIL
WIRE, NO. 14 GAGE - - - - - 8' REQD - - - - - NIL
PLYWOOD, 3/8" - - - - 300 SQ FT REQD - - - 309 LBS
PLYWOOD, 3/4" - - - - 118 SQ FT REQD - - - 243 LBS
ANTI-CHAFING MATERIAL - - - AS REQD - - - - - NIL

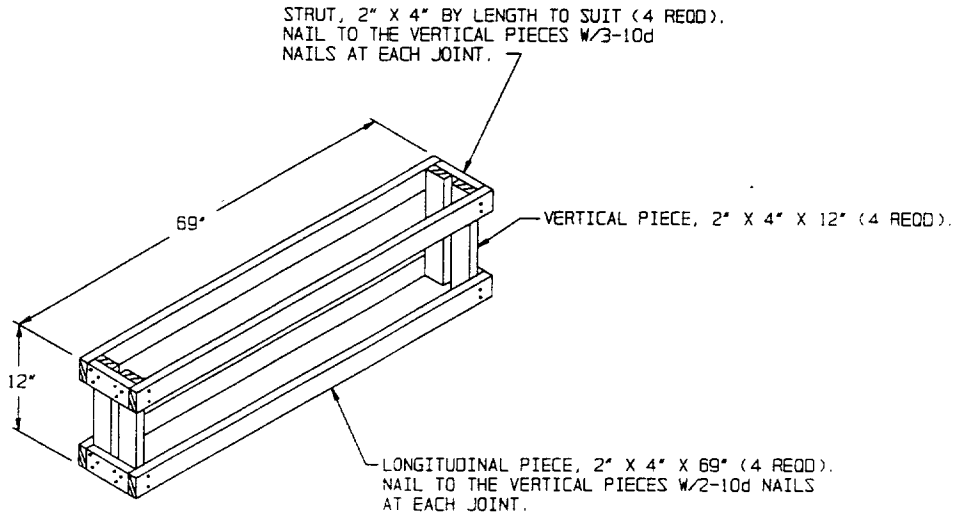
LOAD AS SHOWN

ITEM	QUANTITY	WEIGHT (APPROX)
BOMB PALLET UNIT	3	12,399 LBS
COMPONENT ITEMS		7,800 LBS
DUNNAGE		1,541 LBS
CONTAINER		6,050 LBS
TOTAL WEIGHT		27,290 LBS (APPROX)

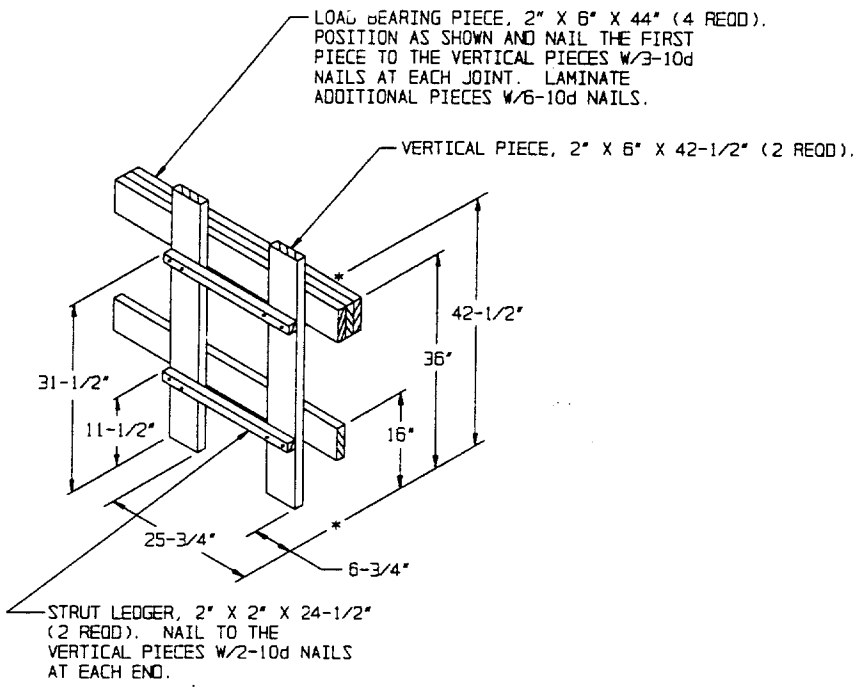
6 COMPLETE ROUND LOAD



CRIB FILL D

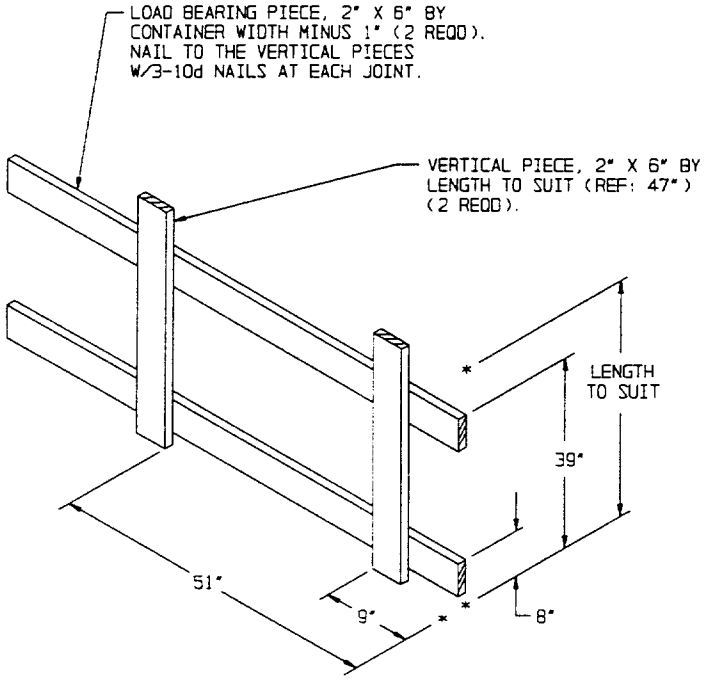


CRIB FILL E



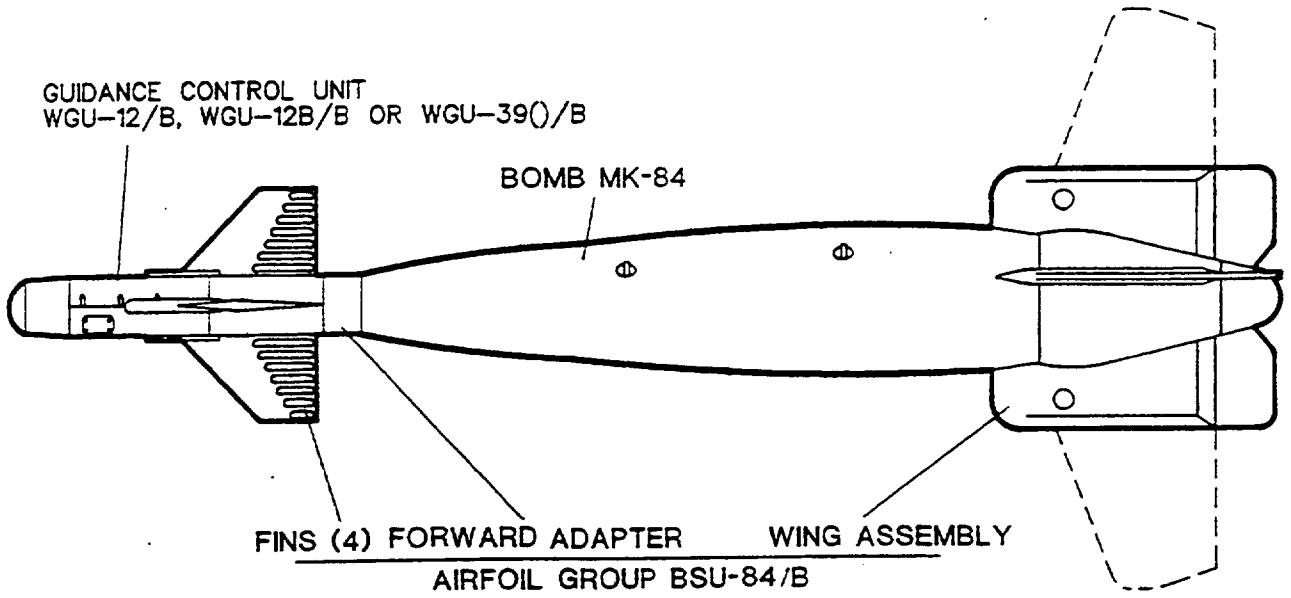
CENTER GATE K

A RIGHT HAND GATE IS SHOWN. THE LOAD AS DEPICTED ON PAGE 18 REQUIRES TWO (2) RIGHT HAND AND ONE (1) LEFT HAND GATE. NOTE THAT THE VERTICAL PIECES MUST BE IN ALIGNMENT WITH THE NOSE ENDS OF THE BOMBS.

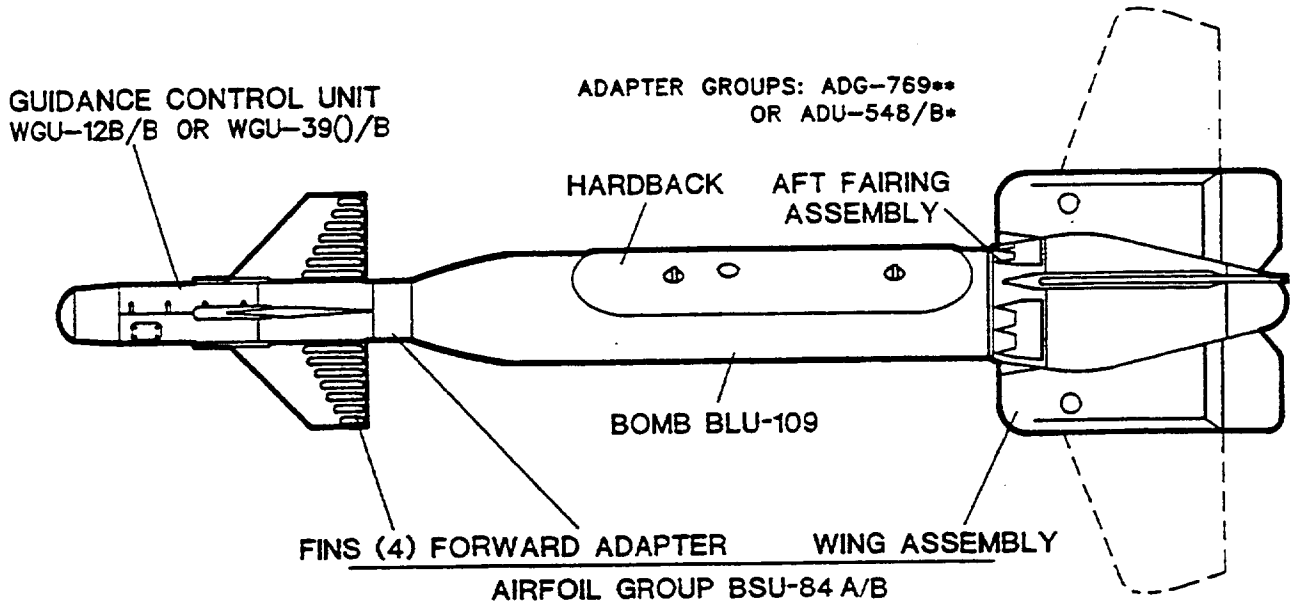


CENTER GATE L

NOTE THAT THE VERTICAL PIECES MUST BE IN ALIGNMENT WITH A ROW OF CONTAINERS.



GBU-24/B



GBU-24 A/B

NOTES

*-FZU EXTENDER AND LUG SLEEVES (2) LOCATED UNDER HARDBACK.

**-FZU EXTENDER, LUG SLEEVES (2), SUSPENSION LUGS (2) LOCATED UNDER HARDBACK.

G8991524

Figure 2-1. Low-Level Laser-Guided Bomb

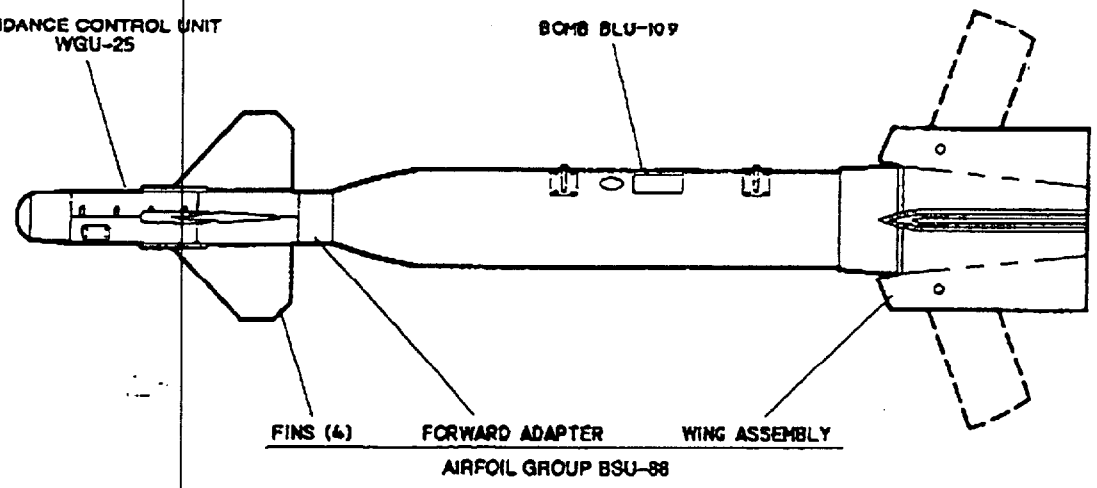


Figure 2-1. Hard Target Guided Bomb GBU-27

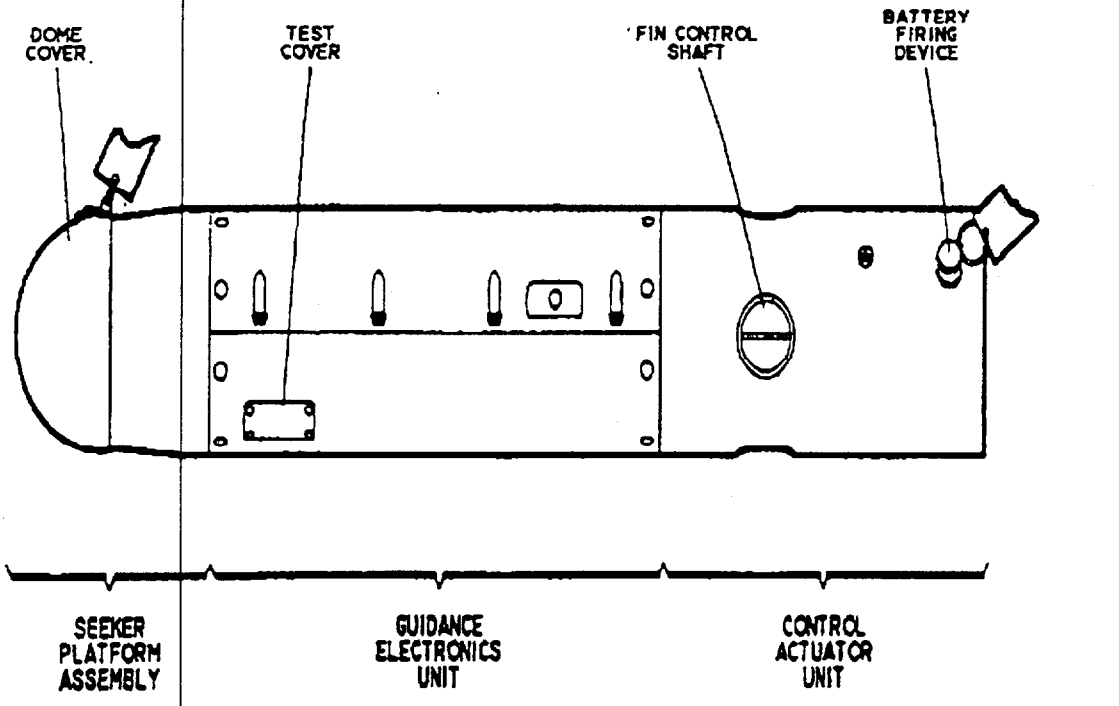


Figure 2-2. Guidance Control Unit (Typical)

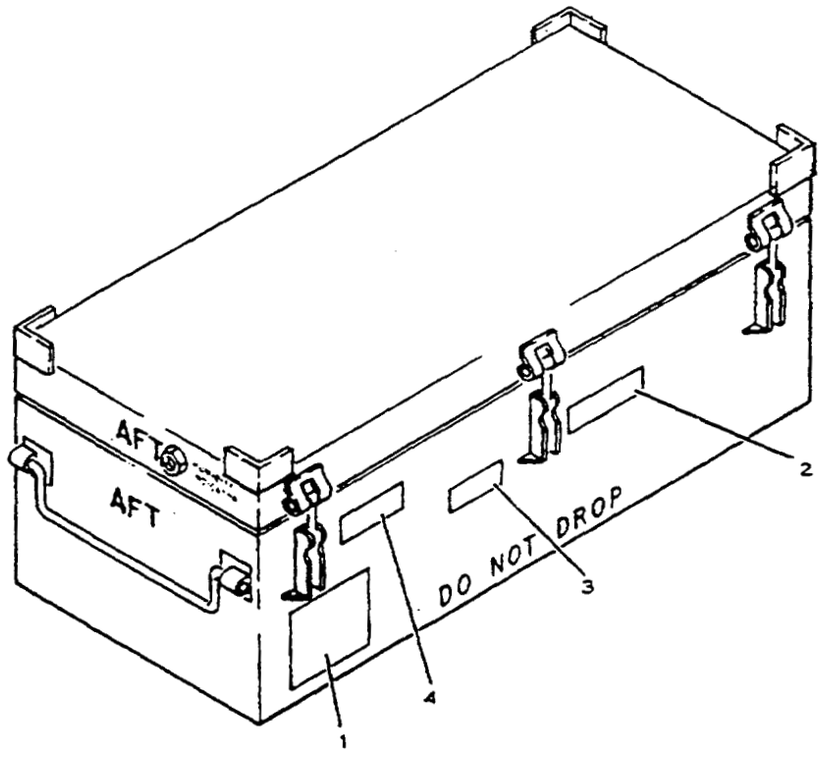
Atch 3

2-8. PACKING. The GCU is packed in reusable shipping and storage container CNU-371/E (figure 2-7) containing one GCU. It is approximately 49.50 inches long, 12.50 inches high, 13.82 inches wide, and weighs approximately 60 pounds. The AFG is packed in reusable shipping and storage container CNU-373/E (figure 2-8) containing two airfoil groups. It is 64.25 inches long, 38.50 inches high, 44.00 inches wide, and weighs approximately 442 pounds. The adapter group is packed in reusable shipping and storage container CNU-439( )/E (figure 2-9), containing four adapter groups. The container is approximately 62.00 inches long, 26.66 inches high, 38.00 inches wide, and weighs approximately 298 pounds.

2-9. MARKING. The GCU and airfoil groups are marked as shown in figures 2-10 and 2-11. The adapter group does not have identifying markings. Container markings are shown in figures 2-7, 2-8, and 2-9.

2-10. WARRANTY DESCRIPTION. The GCU, AFG, and adapter group are covered by a warranty for a period of 12 months (or 90 days, if removed from prescribed protective container [illegible] subparagraph 4-2.b.(2)) against defects in [illegible] and workmanship. Expiration of the 12-mo[illegible] ranty period is determined by date stamped [illegible] warranty label located on each unit (figures [illegible] and 2-11). Warranty label for airfoil group[illegible] located on wing assembly only. Adapter group do[illegible] not have a warranty label. Warranty defects ar[illegible] determined by performance of visual inspection (table 5-1) and/or functional testing (paragraphs 5-7 and 5-9). A single asterisk (*) preceding an inspection checkpoint in table 5-1 indicates a warranty defect and maintenance shall not be performed. Replacement and/or adjustments requiring disassembly of GCU subassemblies will void warranty if performed. Limited repair and replacement of major assemblies in accordance with table 5-1 is authorized and will not void warranty, unless defect/failure was determined by an inspection checkpoint with single asterisk (*). Special tests and inspections will not be required to validate warranty units. Recertification of units (subparagraph 4-2.b.) will not extend warranty.

Orig 4 102



TYPICAL MARKINGS

1. MARK:

   NATIONAL STOCK NUMBER, GUIDANCE ELECTRONICS UNIT P/N, ITEM DESCRIPTION, QUANTITY, UNIT OF ISSUE, LEVEL OF PROTECTION/DATE PACKED, GROSS WEIGHT/CUBE, LOT/BATCH NUMBER, SERIAL NUMBER, DATE MANUFACTURED, CONTRACT NUMBER, CONTRACTOR'S NAME AND ADDRESS, (CONTRACT NUMBER AND CONTRACTOR'S NAME AND ADDRESS MAY NOT BE ALLOWED FOR SOME FMS SHIPMENTS)

2. LABEL:

   NON-FLAMMABLE GAS

3. MARK:

   OVERSEAS OR DOMESTIC ADDRESS (ALSO SPECIAL HANDLING CERTIFICATION IF AIR TRANSPORTATION ON CONTAINER'S SIDE OPPOSITE TO ONE SHOWN) INTERNATIONAL LOGISTIC MARKING (FOR FMS ONLY). MARK ON THE CONTAINER'S SIDE OPPOSITE TO THE ONE SHOWN

4. METHOD II LABEL

G9401988

Figure 2-7. Shipping and Storage Container CNU-371/E (Typical)

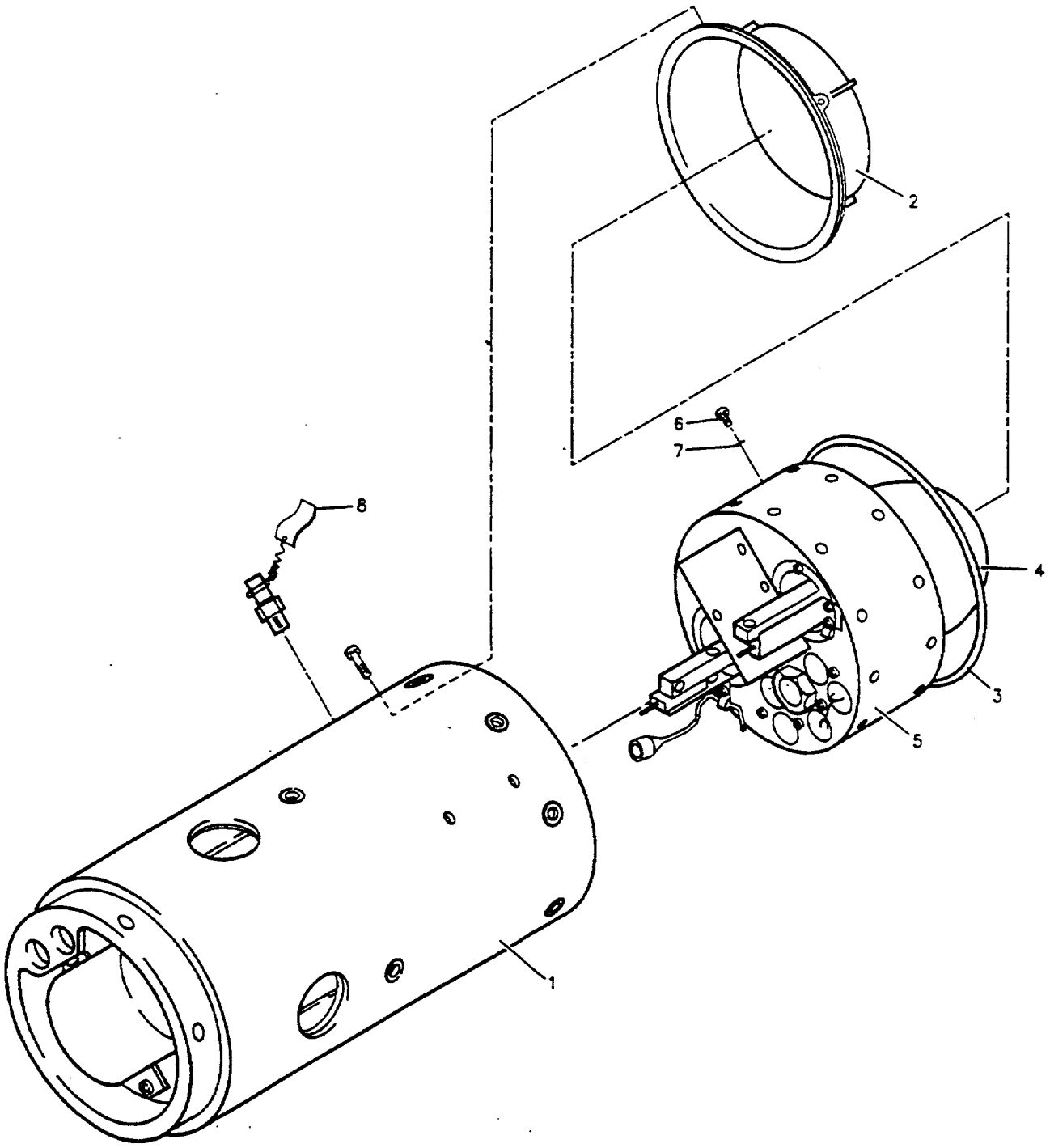


Figure 7-3. Control Actuator Assembly

Atch 5 Page

FIG & INDEX NO.	PART NUMBER	FSCM	DESCRIPTION 1 2 3 4 5 6 7	UNITS PER ASSY	USABLE ON CODE	SMR CODE
7-3-	2777650-3	96214	CONTROL ACTUATOR ASSEMBLY ..... (Replaces 2777650-4) (see figure 7-1 for NHA)	REF		PAFDD
-1	2777633-6	96214	. HOUSING, Control	1		XBD-
-2	2777628-1	96214	. SEAL.....	1		PAFZZ
	NAS1635-08LE10	26304	. SCREW, Self-locking (TI spec ..... 418739-73) (AP)	4		PAFZZ
	=LP51957-46	03038	. SCREW, Self-locking (TI spec ..... 531118-46) (AP)	4		PAFZZ
-3	MS9068-263	96906	. PACKING.....	1		PAFZZ
-4	2853412-1	96214	. BOTTLE, Gas	1		PADZZ
-5	2777670-3	96214	. MANIFOLD ASSEMBLY (Used on ..... 2777650-3 only)	1		PADDD
	2777670-4	96214	. MANIFOLD ASSEMBLY (Used on ..... 2777650-4 only)	1		PADDD
	NAS1405-7	80205	. SCREW (AP)	4		PADZZ
-6	604357-1	96214	. . PLUG, Nitrogen	1		PAFZZ
-7	2-015S613-60	02697	. . PACKING, Preformed, O-ring (TI ..... spec 414193-25)	1		PAFZZ
-8	37638	31394	. . FLAG, Signal-flight safety (TI spec ..... 533077-1)	1		PAFZZ
	=7127911-10	98747	. FLAG, Signal-flight safety.....	1		PAFZZ

Atch 5 2 of 2

DWG NO 2711941 SH 1 8120 0000

APPLICATION	
NEXT ASSY	USED ON
2711682	1358B-1
2711682	1358C-1

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
A	CN193241 J. GUZMAN	82/1/22	
B	CN219924 K. MCGUIRE	83/1/19	
C	CN251448 R. STARRITT	83/6/14	
D	CN312010 P. SWANSON	83/9/30	

Jerry, I am including the applicable pages from the spec.

Jeff

HIGH PRESSURE GAS BOTTLE

TEXAS INSTRUMENTS PART NO. 2711941-1

PROGRAM	SIGN	DATE
ENG.		81/7/1
M.G.		7/1/81
REL.		81/7/1
QRA.		81-7-2
PROJ.		81-7-6

TI PROPRIETARY INFORMATION - INTERNAL DATA

STOP

REV																				
SHEET																				
REV STATUS OF SHEETS	REV	D	D	D	D	D	B	D	B	B	B	B	-	-	C	C	D	D	D	C	D
	SHEET	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20

UNLESS OTHERWISE SPECIFIED
- DIMENSIONS ARE IN INCHES
- TOLERANCES: ANGLES ±1° 3 PLACE DECIMALS ±.010 2 PLACE DECIMALS ±.02
- PARENTHETICAL INFO FOR REF ONLY

DWN B. Elbert DATE 81/06/30
CHK 81-6-30
ENGR 81/6/30
MFG 81/7/1
QA 81-7-2
CONTR F08635-80-C-0144
RLSE 81-7-7
CM 81-07-06

TEXAS INSTRUMENTS INCORPORATED Dallas, Texas

BOTTLE, GAS, HIGH PRESSURE

SIZE A | FSCM NO 96214 | DRAWING NO 2711941

SCALE | REV D | SHEET 1 of 20

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3.2.1.3 Volume and Weight

The nominal volume of the gas bottle shall be between 43 and 50 cubic inches. The gas bottle weight, filled with helium and sealed, shall not exceed 3.5 pounds (1588 grams).

3.2.1.4 Materials

All materials used shall be corrosion resistant or suitably treated to prevent corrosion.

3.2.1.5 Color

The gas bottle except for the threads shall be painted gray (No. 16187) in accordance with MIL-STD-101 along with a buff color (No. 13594) stripe shown in Figure 1

3.2.1.6 Shear Cap

The shear cap shall have a maximum tensile strength of 185,000 psi and be capable of withstanding a pressure of 11,500 psig minimum

3.2.1.7 Shipping

The shear cap shall be protected during shipment with a 1.19 diameter metal cap enclosing the shear cap.

3.2.1.8 Safety Wire Provision

The gas bottle shall include provision for 0.031 nominal diameter lock wire as shown in Figure 1.

3.2.1.9 Gas Composition

The gas bottle shall contain helium gas per Federal Specification BB-H-1168, Type I, Grade A.

3.2.1.10 Pressure Rating

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DWG NO 2711941 SH5

TI PROPRIETARY - INTERNAL DATA

3.2.1.10.1 Gas Weight and Density

The gas bottle shall be filled with helium at 25°C such that the gas density shall be between 1.10 gm/in^3 (7400 psig) and 1.27 gm/in^3 (8800 psig). Table I continues the required gas weight limits. (See Figure 2 for density to pressure conversion)

3.2.1.10.2 Proof Pressure

The minimum proof pressure shall be 150% of maximum fill pressure at 25°C.

3.2.1.10.3 Burst Pressure

The minimum burst pressure shall be 222% of maximum fill pressure at 25°C. When the pressure levels exceed the burst pressure and rupture occurs, fragmentation of the tank is not permissible.

3.2.1.10.4 Pressure Safety Device

The release pressure of the safety device shall be 11,500 psig minimum

3.2.2 Performance Requirements

The shear cap shall be perforated with the electro-explosive bottle cutter specified in Texas Instruments Specification 96214-2711679.

3.2.3 Reliability Requirements

3.2.3.1 Storage Life

The minimum useful storage life of the gas bottle shall be 10 years at which point the minimum density of gas must be > 1.04 grams/in^3. Table 2 contains the required acceptance limits. Leak rate analysis shall be performed on each bottle using mass spectrography techniques or other suitable means to validate an acceptable leak rate.

3.2.3.2 Production Reliability/Failure Reporting

The inherent reliability of the gas bottle design shall be controlled during the production phase by the implementation of engineering change control, acceptance testing, lot acceptance testing and the use of a closed loop failure reporting and corrective action system in accordance with an acceptable procedure. This system will be imposed on all acceptance test, (Lot Acceptance Test), equipment(s) and will be continuously monitored for indications of hardware degradation. Analysis will identify problems associated with manufacturing, assembly, test or vendor controls. Appropriate corrective action will be defined and initiated.

3.2.4 Environmental Requirements

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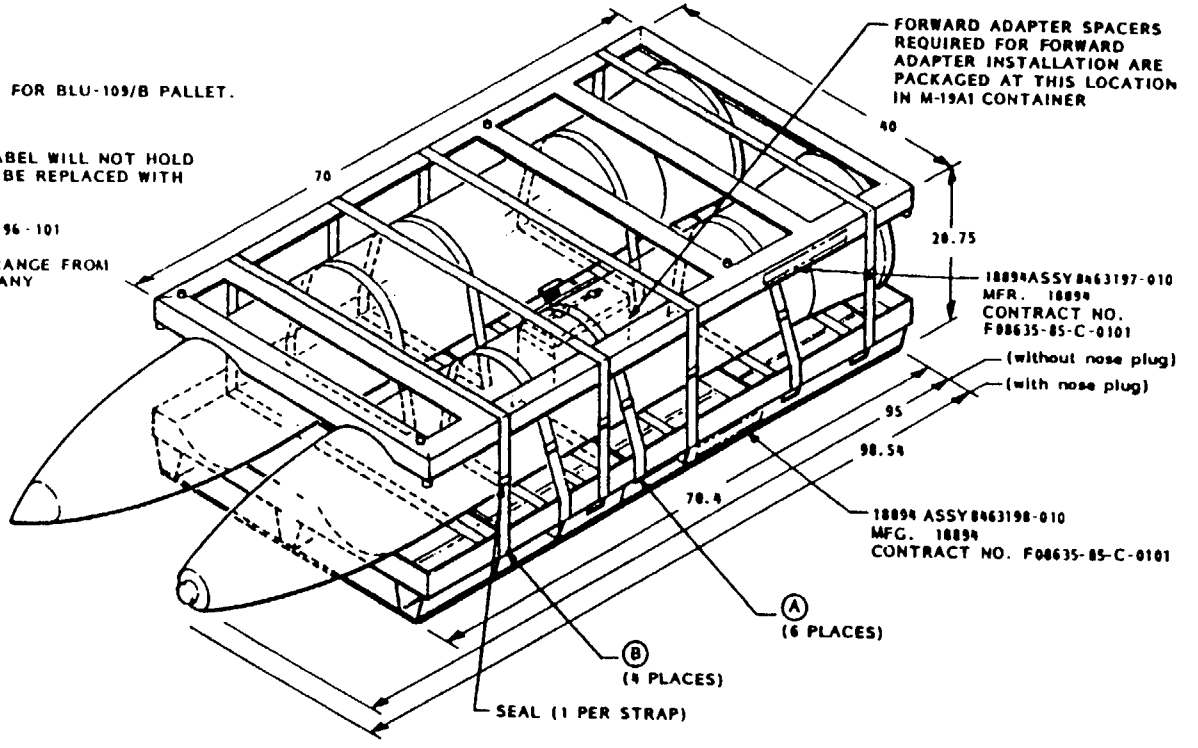
NOTES:

- NO SPLICE IN BANDING IS AUTHORIZED FOR BLU-109/B PALLET.
- TEN BANDS ARE REQUIRED.
- IF ITEMS ARE STORED OUTSIDE AND LABEL WILL NOT HOLD UP DUE TO ENVIRONMENT, LABEL MAY BE REPLACED WITH SUITABLE STENCIL.
- MANUFACTURER'S PART NUMBER - 8463196-101
- SIZE OF LETTERING ON STENCIL CAN RANGE FROM 1/4 INCH TO 1 INCH. COLOR WILL BE ANY CONTRASTING COLOR.

NOTE: DIMENSIONS ARE IN INCHES



STRAPPING PROCEDURES

A. 1-1/4-INCH STRAPPING MUST HAVE AN ELONGATION FACTOR BETWEEN 6.5 PERCENT AND 16 PERCENT AS DEFINED IN QQ-S-781. IF THIS REQUIREMENT CANNOT BE MET, 2-INCH BY 1/2-INCH STRAPPING SHALL BE USED FOR ITEM Ⓑ

B. DO NOT USE TYPE I STRAPPING WITH POWER MACHINES.

C. USE SEAL TYPE D, STYLE I, CLASS II, FINISH B. ALL SEALS SHALL BE DOUBLE NOTCHED.

D. USE STRAP CLASS I, TYPE I OR IV, HEAVY DUTY, FINISH B, GRADE 1. MINIMUM STRAP LENGTHS ARE:

ITEM Ⓐ 65 INCHES (6 PLACES)
ITEM Ⓑ 120 INCHES (4 PLACES)

E. INTERMEDIATE STRAPPING:

1. POSITION TWO BOMBS IN THE BOTTOM FRAME WITH SUSPENSION LUGS INBOARD IN THE 5 O'CLOCK AND 7 O'CLOCK POSITIONS.
2. LOCATE THE AFT END OF EACH BOMB SNUG AGAINST THE AFT RIM OF THE FRAME.
3. THREAD THE STRAPPING Ⓐ DOWN THROUGH CENTER LONGITUDINAL FRAME, UNDER ADJACENT SINGLE BOMB, AND OUT THROUGH OPENINGS IN SIDE OF LONGITUDINAL FRAME.
4. CONNECT THE STRAPPING, APPLY TENSION, AND DOUBLE NOTCH THE SEAL
5. DO STEPS 3 AND 4 SIX TIMES: THREE STRAPS Ⓐ PER BOMB.

F. PALLET STRAPPING:

1. PLACE TOP FRAME ON THE BOMBS WITH THE AFT RIM SNUG AGAINST THE AFT END OF THE BOMBS.
2. THREAD STRAPPING Ⓑ AT FOUR LOCATIONS THROUGH BOTTOM FRAME AND OVER TOP FRAME.
3. CONNECT THE STRAPPING, APPLY TENSION, AND DOUBLE NOTCH THE SEAL.

G. UNSTRAPPING:

1. CUT AND REMOVE STRAPPING. NO SPECIFIC ORDER REQUIRED.
2. REMOVE TOP FRAME.
3. REMOVE BOMBS.
4. RETURN TOP FRAME TO BOTTOM FRAME FOR PALLET STORAGE.

Figure 2-2. CNU-416/E Shipping and Storage Container Strapping Procedures

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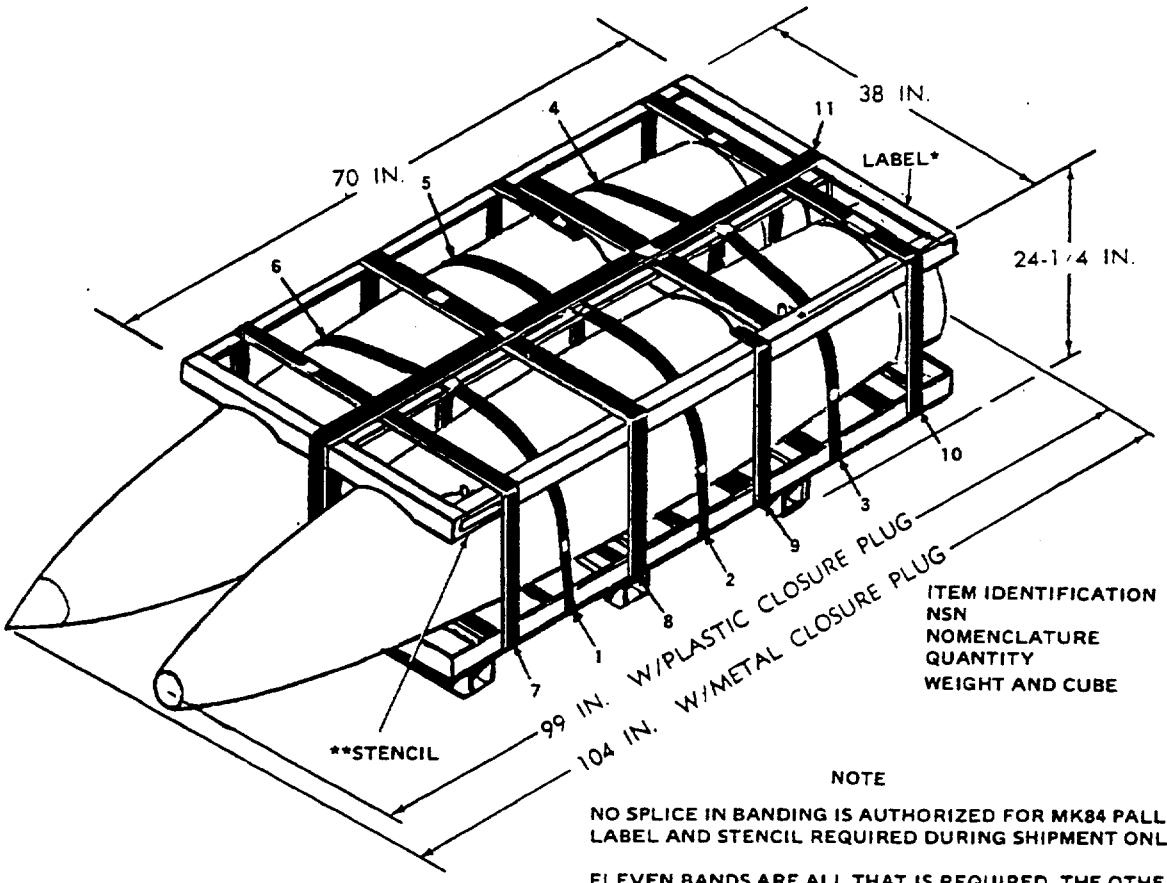

NOTE

NO SPLICE IN BANDING IS AUTHORIZED FOR MK84 PALLET. LABEL AND STENCIL REQUIRED DURING SHIPMENT ONLY.

ELEVEN BANDS ARE ALL THAT IS REQUIRED, THE OTHER TWO BANDS THAT COME INSTALLED DURING RECEIVING ARE NOT REQUIRED

IF ITEMS ARE STORED OUTSIDE AND LABEL WILL NOT HOLD UP DUE TO ENVIRONMENT, LABEL MAY BE REPLACED WITH SUITABLE STENCIL.

* SIZE OF LETTERING ON LABEL CAN RANGE FROM TYPEWRITER SIZE TO ONE INCH AS SIZE OF LABEL PERMITS.

** SIZE OF LETTERING ON STENCIL CAN RANGE FROM ¼ INCH TO ONE INCH. COLOR WILL BE ANY CONTRASTING COLOR.

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Figure 2-2. Bomb Pallet

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use when required.

2.27.12. Don't store flammable liquids in magazines or other locations where explosives are present. Ammunition containing flammable liquids, Group J, must be stored IAW with Table 2.4.

2.27.13. Inert or live explosives or munition components may be stored together. However, training items must be physically separated from the live items they represent.

2.28. Storage Magazines.

2.28.1. Earth-covered magazines (igloo or underground) are preferred for the storage of all explosives. Units may use other types of standard magazines which are built according to approved drawings. Major commands may approve use of existing magazines of other descriptions (including contractors' facilities) if they provide the proper degree of protection and safety.

2.28.2. Any magazine or warehouse-type building that gives protection from the weather and meets Q-D and security requirements is allowed for storing explosives HC/D 1.3 and 1.4 material.

2.28.3. Indoor (magazine) storage is preferable for all types of explosives and is mandatory for bulk high explosives, solid propellants and pyrotechnics. See paragraph 3.21 for exceptions.

2.28.4. Outdoor storage is considered a temporary expedient. Use only when approved by the MAJCOM. For high density storage needed in a limited land area, use the approved barricaded module, see paragraph 3.22. AFMC Sup 1

2.28.5. Certain items which contain explosives have stringent temperature restrictions (see applicable technical order). Take precautions to ensure these limits are not exceeded.

2.29. Explosives Stocks. Store stocks of explosives in their approved, properly marked, storage or shipping configuration. Keep outer containers in good condition and securely closed. Stacks of containers must be stable and arranged in magazines or other approved locations according to storage drawings or directives. If needed, store assembled items with compatible items and components. The following rules apply:

2.29.1. Provide ventilation for all parts of the stack by use of dunnage.

2.29.2. Maintain aisles so each stack may be inspected. Block storage is allowed if stack ventilation is maintained.

2.29.3. Only the explosives needed to ensure a safe and efficient work flow will be present in an operating building when operations are being conducted. This does not preclude storage in an operating building when operations are not being conducted.

2.30. Damaged Containers and Unpackaged Items. Don't store loose explosives items, single inner packages (nonmetal) or explosives in unserviceable containers with properly packed items. Store in a magazine or space set aside for temporary storage awaiting disposition. Store nonstandard boxes of explosives with compatible and properly packed items. Keep boxes properly closed and clearly marked to show contents and quantity. Requirements of TO 11A-1-10, *General Instructions--Munitions Serviceability Procedures*, and the item TO apply.

2.31. Unserviceable Explosives Items.

2.31.1. When dangerously unserviceable items, identified as a critical defect in the item TO and TO 11A-1-10, cannot be destroyed immediately, place them in an isolated location. Separate from other storage facilities by intermagazine distance. Dangerously unserviceable items are those which have a substantially greater probability of inadvertent or unintentional activation than a normal item. Examples would be partially or fully armed fuzes, exuding dynamite, or ruptured munitions with exposed explosives. Suspended munitions (code condition J) must not be used as test assets unless specifically authorized by the item manager. AFMC Sup 1

2.31.2. Segregate other unserviceable items, including lots suspended from issue and use, from serviceable items. Put them in a separate facility or segregate them physically within the same facility. Normal lot-to-lot separation is not considered to be segregated.

2.31.3. Mark each package or stack to show its exact status. The markings must be clear to prevent inadvertent issue or loss of information. AFMC Sup 1

2.32. Authorized Operations in Storage Spaces Containing Explosives.

2.32.1. Palletizing, removing and replacing shipping crates (boxes or protectors) on bombs.

2.32.2. Replacing unserviceable strapping on boxes.

2.32.3. Necessary functional testing or sampling specifically authorized by technical data for performance in a storage location. (For example checking color-coded humidity indicators.) Testing engineers will coordinate proposed testing and sampling authorizations with the Nonnuclear Munitions Safety Board.

2.32.4. Opening bolted or latched special storage containers housing self-contained weapons or missiles for authorized testing, missile reprogramming, sampling or transfer to transport trailer or vehicle and installing control surfaces and argon bottles on AIM-9 series missiles.

2.32.5. Minor repair, cleaning, painting or restenciling of all-up-rounds (AUR) or containers. Solvents and paints used must not create a hazardous or explosives atmosphere within the storage space. Bio-environmental or fire department services will evaluate the potential for hazardous or explosives atmospheres.

2.32.6. Removing bomb or cluster bomb unit (CBU) fuze well plugs for inspection if they can be easily unscrewed as prescribed in the TO. Remove plugs from the storage location for cleaning. If there is a binding of the plug or evidence of exposed explosives, move bombs to an operating location before starting repairs. Clean threads and cavities with approved

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Attn: Ms Shreves
HQ MTMC/MTP-OPS
761-6951 (Voice)
761-3547 (FAX)
From: Capt Drake
USAF Prepo.
488-8761

Guidance Control Unit, WGU-39/B
NSN: 1325-01-356-1432
DODIC: EA37
No EX number assigned
DOLA YRMO: 9407
LAT: C
Helium, Compressed Gas 2.2, UNO 1046, Pg II
DOD COM TRI SVC: FN
HDCG UN: 2.2S, 1046
N.E.W. .56300 LBS/ .255373KGS

Bomb, BLU-109/B
NSN: 1325-01-221-5385
DODIC: F140
EX-8901042
DOLA YRMO: 9506
LAT: C
Bomb, 1.1D, UNO 0034, Pg II
DOD COM TRI SVC: FY
HDCG UN: 1.1D, 0034
N.E.W. - 535 LBS/ 242.672 KGS

Fuze, Bomb, FMU-149/B
NSN: 1325-01-323-9171
DODIC: F809
EX-8812119
DOLA YRMO: 9512
LAT: C
Fuzes, Detonating, 1.4D, UNO 0410, Pg II
DOD COM TRI SVC: FY
HDCG UN: 1.4D, UNO 0410
N.E.W. - .278 LBS/.1261 KGS

Bomb, General Purpose MK 84, Mod 4
NSN: 1325-01-033-9895
DODIC: F275
EX-8803463
DOLA YRMO: 9310
LAT: C
Bomb, 1.1D, UNO 0034, Pg II
DOD COM TRI SVC: NN
HDCG UN:1.1D, UNO 0034
N.E.W. - 940 LBS/ 426.377KGS

Fuze, Bomb, FMU-139 A/B
NSN: 1325-01-214-7311
DODIC: G119
EX-8808613
DOLA YRMO: 9508
LAT: CA
Fuzes, Detonating, 1.2D, UNO 0409, Pg II
DOD COM TRI SVC: FY
HDCG UN: 1.2D, UNO 0409
N.E.W. - .2778 LBS/ .12601KGS

Hope this helps
SDD